FEBRUARY • 1961

FIREMEN

VOLUME 28, NUMBER 2, COPYRIGHT © 1961 NATIONAL FIRE PROTECTION ASSOCIATION PRINTED IN U. S. A.

Fort Wayne Service Station Fire—*see pages 9 and 16*

TIONAL FIRE
OTECTION
SOCIATION

65th
year

FIRE PREVENTION CONTEST WINNERS - page 10

GASOLINE SERVICE STATIONS - - - - - - page 16

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...pumps to meet all your needs...and meet them best

TYPE UA

FRONT-MOUNTED PUMPS
500-750 GPM CLASS "A" RATING

Ample pressure for fog gun operation. Fights fires "on the move".

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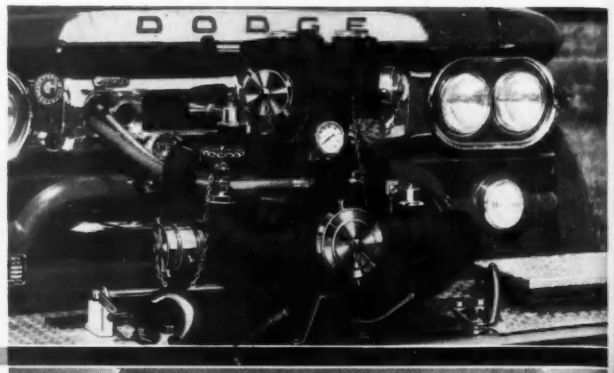

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High pressure for fog gun service.
2 Independent pumps. 3 Pressure & Volume selections.

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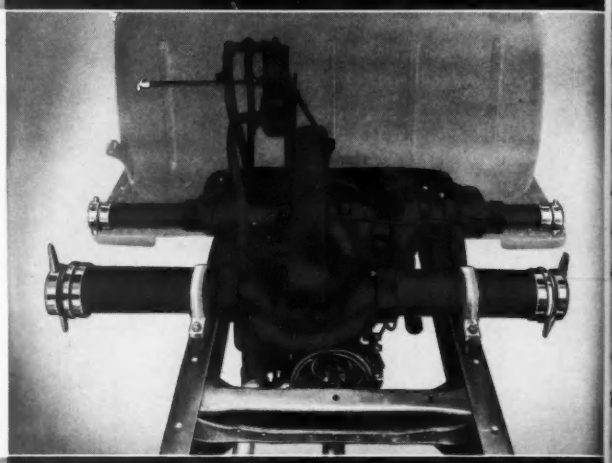

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Weighs only 125 Lbs.
A versatile unit for any department.

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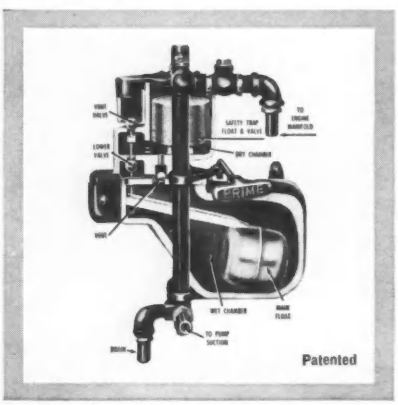

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City_____ Zone____ State_____

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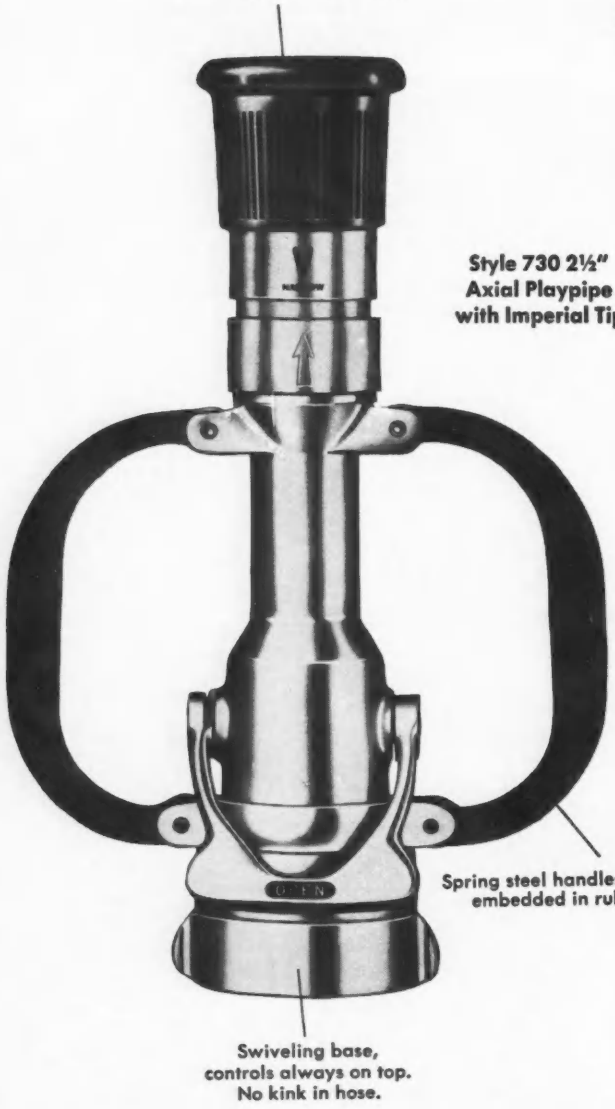
Imperial tip delivers full gallonage at any setting.
Style 730 2½" Axial Playpipe with Imperial Tip
Spring steel handles deeply embedded in rubber.
Swiveling base, controls always on top. No kink in hose.

See New Akron Brass Catalog 60—Page 26

Compact. Perfectly balanced, shut-off in the center, not on top. 15⅜" long.

Full swiveling base keeps hose straight. Controls are always on top where they're easy to see and handle.

Spring steel handles, deeply embedded in rubber, anchored securely to playpipe body. Cannot pull off. Added safety. Comfortable grip.

Tip adjusts easily under any pressure. Imperial tip gives same gallonage from straight stream to wide angle fog.

Lightweight! 14¾ lbs.

2 Nozzles in 1

If you want to go forward with 1½" line, shut off, take off tip, add 1½" line to playpipe. Quarter-turn baffle tip and presto — your 2½" nozzle becomes a 1½" nozzle.

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FIREMEN

Volume 28 Number 2

A monthly magazine published for the fire service members of the National Fire Protection Association, 60 Batterymarch Street, Boston 10, Massachusetts.

FIREMEN magazine is available only through membership in the NFPA. Complete details on membership can be obtained by writing to the National Fire Protection Association, 60 Batterymarch Street, Boston 10, Massachusetts.

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A fire at a gasoline service station in Fort Wayne, Indiana, last year is the subject of this month's cover photo. Like many flammable liquid fires, it featured intense heat, heavy smoke and billowing flame, all of which combined into a serious problem for fire fighters.

Using combination fog nozzles on 2½-inch lines, the Fort Wayne Fire Department was able to protect exposures effectively and to confine the burning gasoline to the service station area, once the remote pumping system had been shut off.

This fire incident, however, reminds us that there are more than 100,000 gasoline service stations in the United States which dispense millions of gallons of flammable liquids each day. Because of the hazards involved, and because fire departments, on occasion, may respond to service station fires similar to the Fort Wayne incident, a special feature on gasoline service stations has been prepared for this issue. See pages 16 and 17.

The year just completed recorded its share of fire tragedies and tremendous property damage by fire. Preliminary estimates released by the NFPA Department of Fire Record state that fires caused 11,350 deaths and $1,541,000,000 loss in the United States in 1960. Corresponding figures for 1959 (worst annual fire loss in U.S. history) were $1,439,640,000 and 11,300 deaths.

The 1960 United States property damage loss of $1,541,000,000 includes $1,145,000,000 loss to buildings and contents and $396,000,000 loss in aircraft, motor vehicles, forest and other non-building fires. In 1959 the building and contents loss was $1,083,210,000 and other fire losses $356,430,000.

The worst fire in 1960, in terms of lives lost and property damaged, occurred December 19 aboard the aircraft carrier *U.S.S. Constellation*. A preliminary report of this fire in the January 1961 issue of NFPA *Fire News* reported that, three weeks after the fire, the number of dead was 50 and property damage estimate was $47,942,000.

The National Fire Protection Association will hold its 65th Annual Convention at Detroit, Michigan, May 15–19, 1961. Convention headquarters will be the Statler-Hilton Hotel, where all sessions of the meeting will be held. Full information about hotel accommodations and rates will appear in forthcoming issues of NFPA *Fire News*, which will also feature the tentative program of the meeting. A local committee of NFPA members, headed by Chairman John J. Ahern, Director of Security for General Motors Corporation, and Co-chairman Glenn Thom, fire marshal of the City of Detroit, is promoting the meeting.

Fire chiefs and other members of the fire service are cordially invited to attend this 65th Annual Convention. As in previous years, the program will feature many topics of significance and direct interest to the fire service. Make a note of the dates now — May 15–19 — and plan to attend!

A month from now spring will make its official appearance, bringing warmer, perhaps better weather, but at the same time uncovering the trash and litter hidden by winter. This is a sign for municipalities to launch their annual Spring Clean-Up campaigns, and throughout North America there will be a resurgence of better housekeeping and general sprucing up of municipalities.

Again, this year, the NFPA has prepared some colorful items for promoting the fire safety aspect of Spring Clean-Up campaigns. The back cover of this issue features a complete list of these latest materials which can be ordered now from the NFPA Publications Department.

WARREN Y. KIMBALL, Managing Editor; PAUL R. LYONS, Editor; HENRY S. GERE, Advertising Manager; ROWENA D. DORES, Editorial Assistant; SHIRLEY TOBEY, Fire Service Department; VIRGINIA STILES, Advertising Department.

GRAND AWARDS!

Municipalities

Martinsville, Virginia

Hamilton, Ontario

Industrial Division

Guide Lamp Division
General Motors Corporation
Anderson, Indiana

Government Division

Veterans
Administration Center
Los Angeles, California

Military Division

Fort Lewis
Washington—U.S. Army

Ramey Air Force Base
Puerto Rico
U.S. Air Force

Marine Corps Recruit Depot
Parris Island
South Carolina
U.S. Navy

RCAF Station
Uplands, Ontario
Department of
National Defence
Canada

WINNERS OF THE

1960 FIRE PREVENTION CONTEST

MARTINSVILLE, Virginia, and Hamilton, Ontario, won the grand awards for U. S. and Canadian municipalities, respectively, in the 1960 Fire Prevention Contest, sponsored by the NFPA Fire Prevention and Clean-Up Campaign Committee. Top award in the Industrial Division went to the Guide Lamp Division of General Motors Corporation, Anderson, Indiana. Winner in the Government Division was the Veterans Administration Center, Los Angeles, California, while in the Military Division Fort Lewis, Washington; the Marine Corps Recruit Depot at Parris Island, South Carolina; Ramey Air Force Base, Puerto Rico; and the RCAF Station, Uplands, Ontario, topped the entries.

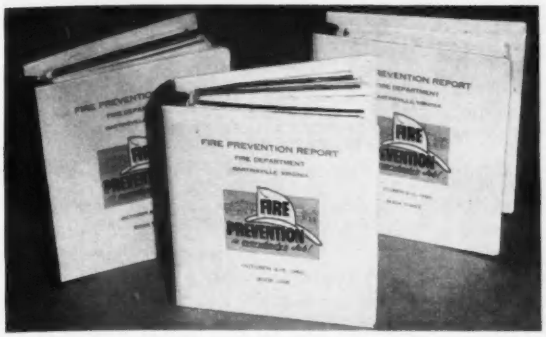
A total of 1,779 entries were submitted for the contest, 200 more than the previous year and one of the highest totals in the history of the contest. Cities and towns of 49 of the United States and 8 Canadian provinces were represented. Entries also came from military installations in Japan, Korea, the Philippines, Britain, France and Germany. A complete listing of the winning entries, together with their ranking on a national basis according to population class, may be obtained from the NFPA Public Relations Department.

The year-round programs reported by the grand award winners showed good planning, sound organization, and effective promotion. As mentioned previously in this magazine, contest judges evaluate the fire department's role in the fire prevention program and also how well the department has gained the support of local business, industry and the general public within the municipality. It is also important that statements made in the contest entry form be backed up by newspaper clippings, photographs, and other evidence.

The two municipal entries which won the grand awards provided outstanding examples of what can be accomplished by a fire department which dedicates itself to establishing a thorough program of fire prevention. In Martinsville, Virginia, the fire department, under the direction of Clay A. Easterly, has 17 paid men and 35 volunteers. As reported in the three volumes submitted to the contest, the fire department plans its year-round program to start and end with Fire Prevention Week each October. In 1960, for the first time, the activities of the program were extended throughout the area of Henry County.

Captain Clay Davis was assigned to lead the Fire Prevention Committee, which was responsible for planning, supervision, promotion, publicity, and public relations of the year-round program. This committee included other members of the fire department and representatives from industry, public schools, churches, stores, newspapers, radio stations, and insurance organizations.

With the fire department as a principal sponsor of the program, a steering committee of eleven persons was organized. Under this group, 22 division committees functioned, including groups from 13 elementary schools and 4 high schools, since Martinsville put a great deal of emphasis on the school fire safety program. All fire prevention materials used in the schools were first submitted to, and approved by, school administrators, including sets of instructional materials for



Martinsville, Virginia's, grand award winning entry. Three loose-leaf volumes, each 12 inches square, described the outstanding year-round program.

Typical pages from Martinsville's entry. Newspaper clippings, photographs and other evidence substantially backed up statements in contest entry form.

teachers which were developed for each month of the year. The Martinsville Junior Fire Department Program, featuring Sparky the Fire Dog, attracted more than 7,200 youngsters as members.

The fire department also had an outstanding home inspection program and an interesting fire safety program for hospitals. The contest entry included floor plan sketches of the hospitals as well as a fire exit drill plan which had been developed for each institution.

To strengthen its Fire Prevention Code, Martinsville adopted certain NFPA standards by reference so that the provisions of the most recently published standards will apply. In his report, Chief Easterly mentioned a newly adopted program of "standby service" which the department started last year with good results.

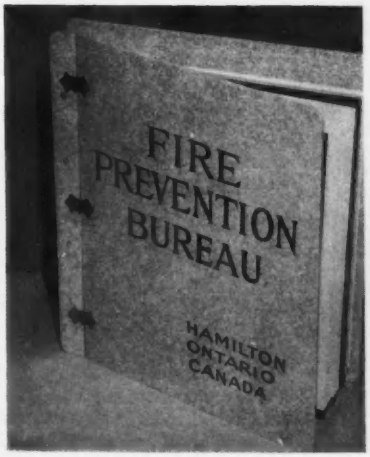
In providing this service, the department assigns men and sometimes apparatus to various gatherings of public assembly in and around the city. While the Fire Prevention Code requires the presence of firemen at certain large gatherings of the public, the members of the Martinsville Fire Department volunteered their services for such meetings as basketball games, fashion shows, Christmas parties, etc. Altogether, 56 of these meetings during the course of the year were attended by 175 men of the department. On occasion, certain fire apparatus was also assigned to provide help or protection for certain outdoor functions.

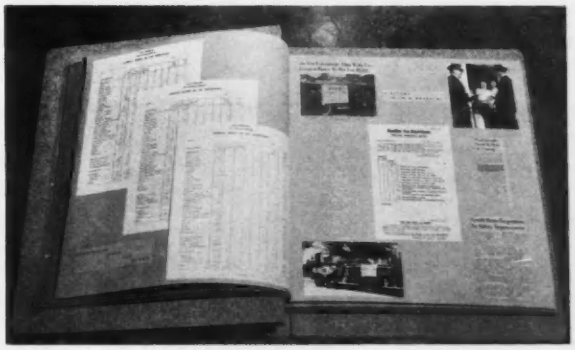
The fire department in Hamilton, Ontario, headed by Chief R. F. Swanborough, has 341 paid members. To develop the fire prevention program for this city of nearly 240,000 population, Chief Swanborough assigned a special fire prevention committee which included Chief Fire Prevention Officer F. S. Staunton and 12 other members of the department. This group, in turn, gained the support of members of the Hamilton Safety League, the Chamber of Commerce, the Police Safety Division, the Home and School Association, the YMCA and YWCA, the Forestry Association, the Trucking Council, the Real Estate Board, merchants' associations and insurance organizations.

Hamilton has an extensive inspection program and puts particular emphasis on the enforcement of fire safety regulations in multiple family residences. Last year's dwelling inspection program covered more than 48,500 dwellings, and about 2,800 hazards were discovered and corrected through these inspections. When the firemen visited one dwelling, a family found three live hand grenades which had been in the building for nearly 15 years. The Hamilton Fire Prevention Bureau, last year, started a Junior Fire Department Program which grew beyond all expectations and now includes more than 40,000 youngsters, with about 8,700 from the city and the balance from 25 neighboring municipalities.

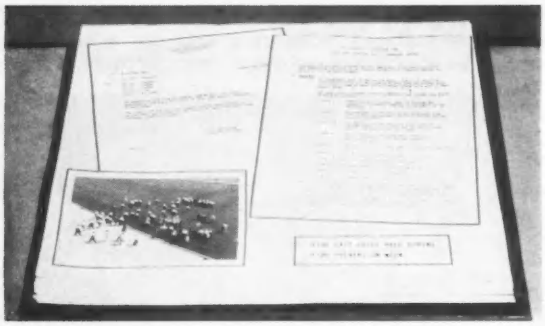
The department tried a new approach to the school fire safety program last year by presenting plaques to the schools which gave the greatest attention to fire safety. Each school was evaluated on the basis of cleanliness, compliance with fire regulations, behavior of students during fire exit drills and the conducting of certain fire safety projects. The two plaques awarded last year were sponsored by the Chamber of Commerce.

At Christmas time in Hamilton, the Fire Prevention Bureau arranges to have every Christmas tree sold in





Hamilton, Ontario, won top honors among the Canadian municipalities entered in the NFPA contest. Pages in the 20 x 20 inch scrapbook showed good planning and organization.



Guide Lamp Division of General Motors Corporation won first place in the Industrial Division with this carefully planned, well-illustrated volume.

Every entry that satisfactorily met the rules of the Fire Prevention Contest was awarded this commendation signed by Percy Bugbee, general manager of the NFPA.

the city tagged with a fire prevention message. Any person who wants to sell trees to the public must first get a permit from the Fire Prevention Bureau. Inspectors from the Bureau then check the location and distribute the tags for the trees. After the holidays, the public is invited, through newspaper ads, to bring Christmas trees to a bonfire in the center of the city, and last year 5,000 trees were burned in this event.

The entry of the Guide Lamp Division of General Motors Corporation, Anderson, Indiana, was picked as the best of many excellent entries from industrial concerns. A single, well-illustrated volume, this entry described the year-round fire prevention program of this modern plant, which employs 4,500 persons. John R. Brown is chief of Fire Safety, and heads a 75-man fire brigade which has two fire stations and uses fixed and portable fire protection equipment. The plant is completely protected by automatic sprinklers, but there are 12,500 feet of 1½-inch hose and 5,000 feet of 2½-inch hose plus fixed and portable foam and carbon dioxide units.

Inspections are conducted daily, weekly and monthly by Chief Brown, members of the fire brigade, safety engineers and plant superintendents. Twice each year, the plant invites the local fire department to tour the facilities for familiarization and fire control planning. Also, twice each year, the local fire department makes a practice run to the plant area, with members of the fire brigade helping to make hose layouts and otherwise use available equipment. The various layouts and evolutions are timed so that improvements can be made where needed.

Members of the fire brigade averaged 16 hours per man in the training program last year. In addition, there were six classes for plant foremen and supervisors and twelve classes for watchmen. Fire exit drills are conducted twice yearly, using the established basic evacuation plan. The fire brigade also carries out mutual aid training with fire brigades of other local industrial plants.

Each Fire Prevention Week, a proclamation is mailed from the general manager to every employee's home. In addition, last year during Fire Prevention Week 267 talks were given by management on some aspect of fire safety. The plant also conducted a Junior Firemen's Day which attracted participation from 10,000 children. A number of awards were given to individual youngsters and to their schools or fire safety projects.

CONTEST JUDGES

John H. Redmond, Vice President, Koppers Co., Pittsburgh, Pennsylvania.

R. A. W. Switzer, Dominion Fire Commissioner, Ottawa, Ontario.

A. Leslie Ham, Chief Counsel of Canadian Underwriters' Association, Montreal.

Cyril S. Hart, President, Boston Insurance Company, Boston, Massachusetts.

Chief William J. Taylor, Burbank, California, President, IAFC.

Wilber E. Smith, American Municipal Association, Washington, D. C.

NEXT MONTH

Highlights of the activities of 20 other fire departments that entered the contest.

GHOST FIREMEN

by Warren Y. Kimball, Managing Editor

TO WHAT extent are the companies of your department manned by "ghost firemen" rather than by actual fire fighters on duty?

By "ghost firemen" we refer to the essential positions on the apparatus which are not covered by manpower on duty. The organization chart for the department may show a given number of "companies." The apparatus may have "Company No. —" painted in gold letters, but unless the number of men required to man the equipment is assigned and on duty ready to ride, the department is to some degree manned by a "ghost crew" which is not there when lives are at stake and property is in danger from fire.

Fire protection authorities are pretty well agreed on what constitutes effective company manning. Engine companies serving high value districts normally should have not less than seven members riding. Other engine companies should have not less than five men. High value ladder companies should have seven men riding and other ladder companies, six men. The officers may be counted as required company members.

Fire protection people also recognize the important fact that to carry out any semblance of company operations or evolutions as an individual fire fighting unit, a fire company, whether engine or ladder, must have at least four men riding at all times. When less than this number are on duty, several companies must be combined on the fire ground to attempt to do the work that one company is supposed to be equipped and manned to do. For example, an engine company carrying only two or three men may get a small line or a low pressure hydrant stream in service, but to man even a single big line at pump pressure will require at least four men including the officer and the pump operator.

Likewise, a ladder company needs not less than four men to raise most ladders and perform normal forcible entry, ventilation and salvage work as well as other truck company duties. Where the ladder truck is not manned as an effective company, personnel from engine companies must be diverted to truck company duties, thus delaying getting buildings opened up and getting water on the seat of the fire. The situation is even more serious where rescues must be made.

In some cases a squad company may perform some of the ladder or truck company duties and may provide some supplemental manpower at fires. It should not, however, be considered as an adequate substitute for providing sufficient manpower so that each fire company can operate its own apparatus promptly with a reasonable degree of efficiency. Certainly, one squad company cannot make up for needed manpower on several engine and ladder companies.

As a means of focusing greater light on the critical manpower deficiency in many fire departments in all parts of the United States and Canada, we suggest that each department maintain a chart showing the proper manpower for each company and the manpower actually on duty. Figure 1 shows a hypothetical fire department in a city of medium size.

This type of chart also makes it possible to see at a glance how many men are available for engine company work and for ladder company duty. For example, Figure 1 shows that 19 men are manning the seven engine companies. This is less than an average of three men per company and three "companies" are running with only two men each. Two "high value" engine companies have a total of only seven men rather than the fourteen needed with these companies. The seven engine companies are running twenty men short. This is about 50 per cent below standard manning. Nine more men are needed on duty to bring companies up to the essential minimum four-man manning.

Only six men are on duty with the three ladder companies. This is the number needed to man one ordinary ladder company properly. Ladder service is thirteen men short; thus, it has only 32 per cent of required strength as compared with 49 per cent for the engine companies. Further, the ladder trucks have only half of the men needed for minimum company manning and one truck has only a driver on duty.

The squad company, which is intended to help counter the manpower shortage, has only three men. This is only 20 per cent of the number of men needed to provide a four-man minimum on duty with each company. If the squad is out on a call the manpower shortage will be more acute at other fires. Also, when fires occur in districts some distance from the squad company's quarters, it may not be available quickly when needed. It is much better to have all companies effectively manned.

Figure 2 shows how the companies in the fire department under consideration are grouped in seven stations or houses. The headquarters house has ten men on duty to man three companies. This does not provide the minimum of twelve needed to provide four men for each rig. It does not take into account that the engine and ladder companies in the high value district require more men. Probably there are four men per shift assigned to each headquarters company

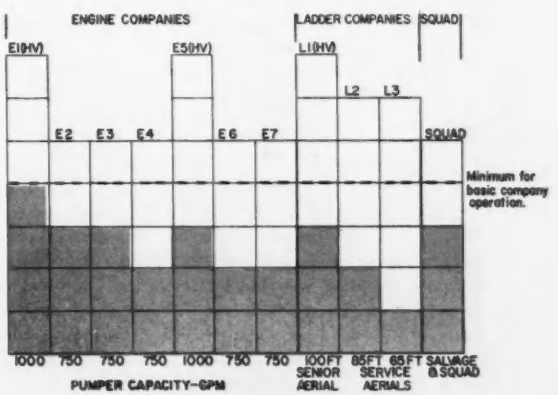


Figure 1

This typical department has seven engine companies, three ladder companies and a squad company. There are 28 men on duty plus two assistant chiefs not shown. (With a three-platoon system this would require a fire force of 100 officers and men.) However, all fire companies are undermanned. Only one engine company has the four-man minimum necessary for basic operation as an individual company.

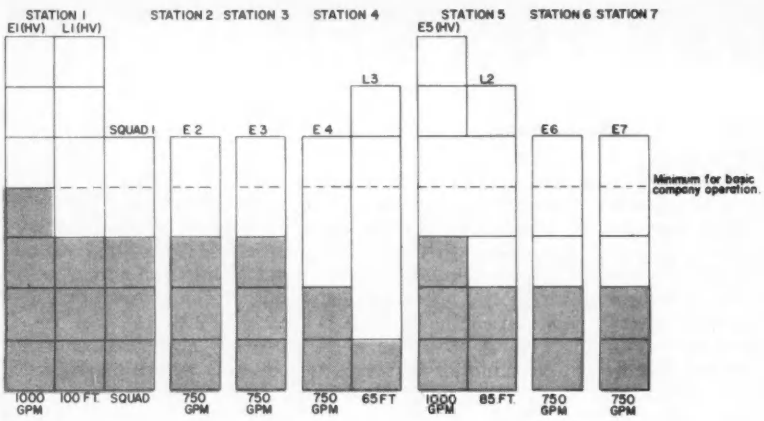


Figure 2

Stations 2, 3 and 4, each running with three men on duty, are capable only of fighting small fires. The crew at Station 4 also operates Ladder 3. The result of assigning an additional unit of apparatus without providing more manpower is that neither piece has an effective crew. Station 5 also has two companies manned by one five-man crew on duty. These companies call for a total of thirteen men on duty and three more men are needed to meet a minimum company strength. Stations 6 and 7, in residential districts, are operated with only two men on duty in each house and are capable of merely running a booster or 1½-inch line. These two houses are on opposite sides of our hypothetical city so cannot be consolidated.

but no allowance is made for vacations, sickness and other absences. Also, in an undermanned fire department, men must be detailed out of the house if other companies are to be kept in service.

Figure 3 shows the response to alarms obtained by the company manning indicated. Downtown, on first alarms, five companies respond with sixteen of the total twenty-eight men on duty. This includes three engine companies (two high value), a high value ladder company and the squad. However, these companies are running fifteen men short and are four men less than the absolute minimum needed to ride four men on a unit.

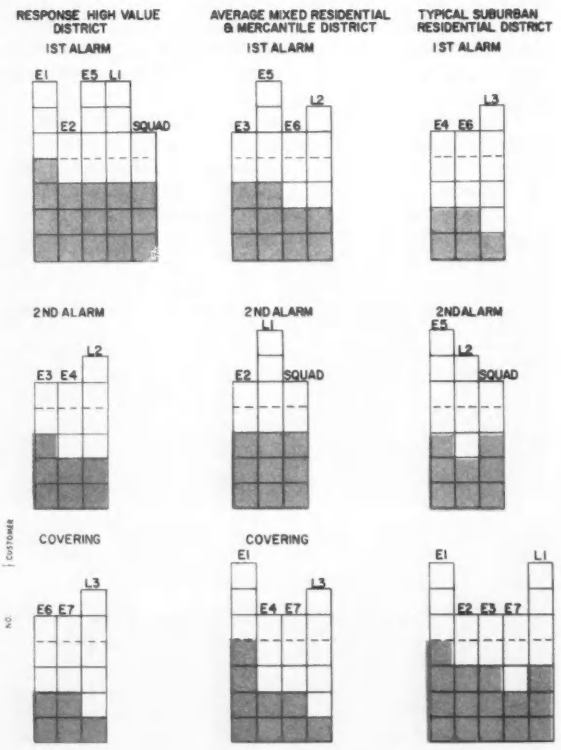


Figure 3

Charts of this type reveal the fire department manpower shortage so that it can be discussed along with shortages in other municipal departments. The public should be made aware of the situation. Then a program of strengthening the department could be started to go along with the growth of the city. Priorities could be given which would be carried out as funds become available.

On a second alarm downtown, two engines and a ladder company are assigned, but this brings only seven more men during the critical period before the off-duty men can be called, get their fire clothes, and respond. Further, during this same critical period there are only three companies manned by a total of five men available for other calls.

In the intermediate residential and mercantile district a first alarm response of four companies, three engines and a ladder, provides only ten fire fighters. This is only 2.5 men per company. If the companies had even four men minimum manning, two engines and a ladder would provide a twelve-man response group and less territory would have to be uncovered. Some cities send the squad on such calls but this would weaken the protection in the high value district.

With undermanned fire departments, many second alarms must be struck to get manpower. In this case, response includes the ladder and squad from headquarters and an additional engine company. This brings nine more men, making a total of nineteen at the fire, which is still less than four five-man companies. In quarters, until off-duty men arrive, is the headquarters engine to protect the high value district, plus two two-man engine companies and one one-man ladder company. This means that the city is practically without ladder protection.

In the suburban residential district a first alarm brings only five men as contrasted with the absolute minimum of twelve needed. There is not a single effective company. The first piece can only run a small line and the second engine brings the first company to a four-man minimum. Only one man is available for truck duty. In the event of any working fire a second alarm will be needed to get at least a dozen men on the scene. With the second alarm response added there will be seven men with three engines, three men with two ladder trucks, supplemented by the three-man squad. If the fire is at all serious it is likely that a third alarm will be needed, further weakening the protection of the city.

In subsequent issues we will discuss further examples of the problems of our "ghost firemen" and "ghost fire companies."

HYDRANTS—

Make the most of them!

Size of outlets, flows, important factors to consider

IN MOST communities having public water systems the fire hydrants are under the jurisdiction of the water department. However, the fire department, as the chief user of hydrants, has a vital and legitimate concern in the type, location and distribution of hydrants, the adequacy of the water supply obtainable from individual hydrants and groups of hydrants, and the maintenance of hydrants.

What individual fire departments do about hydrants varies from city to city. In some communities, fire companies inspect hydrants in their districts and report any faulty operations to the water department. In other communities any use of a hydrant is reported to the water department which then makes an inspection of the hydrant. Some communities which pay hydrant rental to a privately owned water utility have specified that all new hydrants must be located according to the orders of the fire chief. One fire department operates the water system to assure proper hydrant distribution and water supply for fire fighting.

A number of cities have water supply officers in the fire department. It is the duty of such officers to work with the water department to see that all hydrants are placed for efficient use of the engines, that hose layouts may be made from hydrants on both sides of any major property and that fire flows are adequate for the pumping engine capacity that would respond to fires in the various districts.

Some fire departments have developed minimum flow figures which they expect, such as two hydrants providing a total of 1,500 gpm per block for single-family residences, 3,000 gpm in more congested residential districts, and much larger flows in mercantile and manufacturing districts where a number of 1,000 to 1,500 gpm pumpers may be operating at capacity.

All hydrants should meet the standards of the American Waterworks Association which are in agreement with the NFPA standards recommended for hydrants used in private fire protection systems.

The standards of the National Board of Fire Underwriters and recommendations of various insurance inspection and rating bureaus also provide guidance on the subject of required "fire flows" and hydrant distribution for communities of various sizes and for various fire protection needs.

In recent years, many miles of new water mains have been laid, providing good fire protection as well as water for domestic purposes. In general, water authorities have tried to avoid past mistakes of installing mains which are too small for increasing demand and which do not provide adequate fire flows. Fire protection authorities are pretty well agreed that the 4-inch diameter water pipe is of very limited value for fire fighting and that, except for short branch lines or looped lines which may be 6-inch pipe, the 8-inch main is the smallest which gives a satisfactory supply for fire engines. One standard 250 gpm hose stream will cause a pressure drop of about 28 pounds per 1,000 feet of 4-inch main and this size main seldom provides full capacity for a single 500 gpm pumper.

Another important factor in the performance that fire departments get from hydrants is the size and number of outlets used and the type of hook-up employed. As has been pointed out many times in FIREMEN, a single 2½-inch supply hose may be useful in replenishing the booster tank and supplying small streams but is seldom a reliable or adequate pumper supply. This is due not only to the pressure loss in the hose between the hydrant and the pumper but also to the fact that the flow from the hydrant is limited where only one 2½-inch outlet is used.

To supply fire engines at capacity efficiently, the hydrant should have a large outlet (originally called a "steamer connection") to which the pumper can be connected by a short length of large diameter "suction hose" or supply hose. These steamer connections are usually of 4½-inch diameter, although in some areas, California for example, the 4-inch size is standard. To understand the importance of these large hydrant outlets we should think of them as nozzles, for that is what they are. The large outlet is particularly important at a big fire when, due to the demand, the residual pressure at the hydrants is low.

The 2½-inch hydrant outlet has an area of 4.9087 square inches. While this opening provides a flow of 834 gpm if 20 pounds residual can be maintained at the outlet, if the pressure falls to 5 pounds, the flow is cut in half to only 417 gpm. This would not be a good supply for a 750 gpm pump at a big fire. On the other hand, the 4½-inch outlet is capable of flowing 2,710 gpm at 20 pounds residual pressure and will still handle 1,350 gpm at 5 pounds residual. The 4-inch hydrant outlet flows 2,136 gpm at 20 pounds and 1,068 gpm at 5 pounds.

Where hydrants lack 4- or 4½-inch outlets, some fire departments make a practice of using two 2½-inch outlets to supply a siamese at the pumper. However, three 2½-inch outlets are needed to approximate the flow from one "steamer connection."

While special pitot tube equipment and some experience is necessary to make open butt flow tests from hydrant outlets (because at low pressures there may be areas of "non-flow"), it is not difficult for fire departments to make a valid comparison of flows obtained from a hydrant by: (1) supplying a pumper through a 50-foot length connected to a single 2½-inch outlet and seeing how much water can be discharged; and (2) connecting a large pumper suction hose to the "steamer" outlet on the hydrant and seeing how much flow can be obtained. In almost any case the pumper should be able to pump more water when supplied by big hose from the big outlet. The advantage may be critical when working from a low pressure hydrant on a small main.

What to do about

GASOLINE SERVICE STATIONS

Another view of action at Fort Wayne fire shown on this month's cover.

THE intense fire shown on this month's cover occurred last year at a Fort Wayne, Indiana, gasoline service station which had a remote pumping system. According to a report from Chief Howard Blanton of the Fort Wayne Fire Department, the fire started at 5:30 P.M., when a customer, leaving the filling station, accidentally backed into a dispensing unit. The impact tipped the dispenser just enough to break the supply pipe and the conduit which enclosed electric wiring to the remote pump. A short circuit in this wiring ignited the gasoline and at the same time started the remote pump located at the tanks which fed gasoline to the dispensing units.

The station attendant, who apparently feared being trapped in the service building, immediately ran from the area, calling to a customer nearby to turn in the fire alarm. The customer pulled a box three blocks from the fire scene, which added to the delayed alarm.

Because of the sloping driveway, fuel in the other six gasoline dispensers became involved, creating an intense fire. Fort Wayne fire fighters, responding to three alarms with eight engine, a ladder and two squad companies, used seven 2½-inch lines with fog nozzles to gain control. Foam was used in a supplemental attack to prevent flashbacks. The pump island and the immediate area were severely damaged by the fire, but effective use of hose streams prevented major damage to the exposed service station building.

This is a type of fire worthy of study by fire departments. Because automotive transportation is tremendously important to the economy and social pattern in North America, it is likely that service stations will increase in number. One statistical report states that now there are almost 180,000 service stations in the United States. Actually, considering the fact that perhaps thirty or forty million vehicles are refueled at service stations daily and that a great many persons untrained in fire protection are in the presence of easily ignited low flash point flammable liquids, the fire experience of these occupancies has been good.

Nevertheless, when so much of the general public must visit these service stations so frequently, common sense dictates that care must be taken to minimize the possibilities of fire. It is worthwhile for the fire service to consider the basic recommendations for the construction and operation of gasoline service stations and to make sure that sound plans have been established to handle such fires if they do occur.

This article summarizes some of the fundamentals which should be considered.

A Clearly Identified Switch

As mentioned previously in this magazine, NFPA Standard No. 30 — "Flammable Liquids Code" is an extremely useful standard for fire chiefs, fire marshals and other members of the fire service. It is published as a pocket-sized, paper-bound pamphlet (64 pages, 60 cents) and also is included in Volume I of the 1960–61 edition of the National Fire Codes.

Specified in the Code as essential to all remote pumping systems of gasoline service stations is a *clearly identified switch*, readily accessible, by which electric power can be cut off in case of fire or physical damage to gasoline dispensing units. All persons who work at the service station should know the location of this switch, and a sign or other means of identification should indicate the switch location for the general public and for fire fighters who may respond to an alarm.

It is important that this switch and all electrical equipment and wiring, including lighting fixtures, motors and switch gear for pumps handling gasoline, be designed and installed in accordance with recommendations of the National Electrical Code. Sections of this Code (NFPA No. 70) give information on the design and installation of electrical equipment for hazardous locations.

Referring again to the Flammable Liquids Code, we find that Chapter VI deals with service stations. It contains recommendations on the location of tanks and general construction of service stations, the storage and handling of flammable liquids, pumps, dispensing units, delivery nozzles and other important features. In many states, provinces and communities, the recommendations of this Code are strictly enforced, but in some other areas it is not too difficult to find a service station in which an element of basic fire protection has been overlooked.

For example, the general public, and certainly persons who operate service stations, should appreciate that smoking in the vicinity of flammable liquids is dangerous. Yet, quite frequently, persons smoke cigarettes or perhaps use matches or a cigarette or pipe lighter while the vehicle is being filled with gasoline. Perhaps this is the most frequent violation of the fundamentals of fire safety as they apply to service stations. The NFPA Committee on Flammable Liquids recognized

this danger a long time ago. The current edition of the Code contains the following recommendation:

". . . There shall be no smoking or open flames in the areas used for fueling, servicing internal combustion engines, receiving or dispensing of flammable liquids. Conspicuous signs prohibiting smoking shall be posted within sight of the customer being served. Letters on such signs shall be not less than four inches high. The motors of all equipment being fueled shall be shut off during the fueling operation."

The "conspicuous signs" are absent from a number of gasoline service stations and, unless warned, many drivers do not turn off the ignition switch in their vehicles during the fueling operation.

Delivery Nozzles

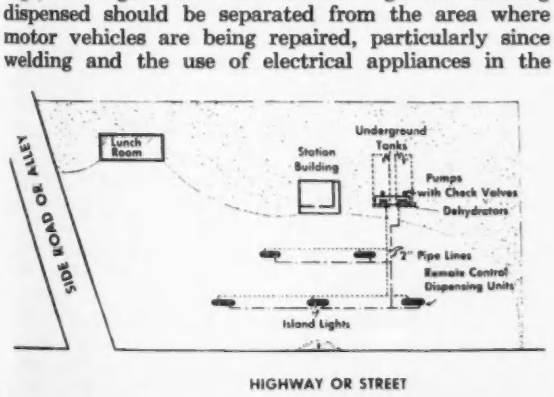
The Code also mentions that "the dispensing of Class I flammable liquids (gasoline) into a fuel tank or into a container shall be under the control of a competent person at all times."

It points out that manual nozzles and approved automatic nozzles with latch open devices can be used for dispensing gasoline. When a manual nozzle is used, it is important that the nozzle be of such design that the gasoline will flow only when the hand of the operator is actuating the nozzle discharge mechanism. If his hand is removed from the manual nozzle, then the nozzle should operate immediately to stop the flow of liquid. Manual nozzles which do not fulfill these functions are forbidden by the Code for automotive service stations (see Paragraph 6351 in Standard No. 30).

Perhaps more popular, however, are the U.L. listed automatic nozzles with latch open devices. Approved nozzles in this category include the latch open device as an integral part of the nozzle assembly. The device shuts off the liquid reliably and positively when the gasoline tank is filled, when the nozzle falls from the filling neck of an automobile tank, when the nozzle is subject to rough usage such as dropping or lack of proper lubrication, or when an automobile is driven away while the nozzle is still in the tank. Even though approved nozzles of this type will operate satisfactorily, the Code still recommends that "a competent attendant shall be in the immediate vicinity of the vehicle being filled by such an approved nozzle."

Other Provisions

A number of other recommendations in this particular standard emphasize that gasoline service stations can be operated with a good degree of safety if the fundamentals of common sense are followed. For example, when gasoline dispensing units are located inside buildings, it is logical that the area where gasoline is being dispensed should be separated from the area where motor vehicles are being repaired, particularly since welding and the use of electrical appliances in the repair area would serve as substantial sources of ignition. It is also sensible that the dispensing units and piping should be protected against physical damage by vehicles. Not all drivers are skilled or fully cautious, and an automobile may bump into a dispensing unit. The Flammable Liquids Code recommends that inside buildings a concrete island or equivalent means be used to protect dispensing units against such damage.



Typical gasoline station with remote pumping system.

Other things mentioned in the Code that are particularly important to fire chiefs and fire marshals are:

1. Aboveground gasoline storage tanks are prohibited at service stations.
2. Vents from underground tanks should discharge vertically or horizontally (not downward).
3. Basements or pits in service stations into which flammable vapors may travel are not permitted unless they are ventilated adequately to prevent the accumulation of such vapors.
4. Also prohibited is the delivery of gasoline into glass jugs or the dumping of waste flammable liquids into sewers.
5. Open flame heating devices should not be allowed in rooms such as lubritoriums where flammable liquids may be dispensed.
6. For information on methods and precautions for testing underground tanks for leaks, see NFPA No. 329M — "Leakage From Underground Flammable Liquid Tanks."

Fire Control

Of course, many types of fires can occur at gasoline service stations, some easy to handle, some extremely difficult. Basically, though, the fire department responding to an alarm for a service station probably considers that its number one problem is the control of a flammable liquids fire, or at least that a quantity of flammable liquids can be exposed to fire. With this assumption, unless a definite pre-fire plan has been established, the fire officers probably consider four elements of operation: rescue of persons who might be endangered by the fire, cutting off electric power, thus stopping any pumps which may be supplying flammable liquids, protecting exposures, and using an efficient method of attack.

If, as in the Fort Wayne incident reported in the first portion of this article, flowing gasoline is involved by fire, the fire department has clear objectives: first, stop the gasoline from flowing, then control the fire. Fort Wayne fire fighters used fog nozzles on 2½-inch lines effectively. Other departments might make their attack with fog nozzles on 1½-inch lines.

From the start of operations it is important that the fog nozzles be supplied with adequate pressure and that the most effective fog patterns be used. While the 1½-inch lines will not provide the volume of water obtainable from the 2½-inch lines, they are more mobile.

Trained fire fighters know that an effective attack can be made on a spill fire if fog nozzles and lines are operated in pairs, so that the fog patterns overlap in the form of a "V." A fire officer can be behind the nozzlemen on both lines directing the path of attack.

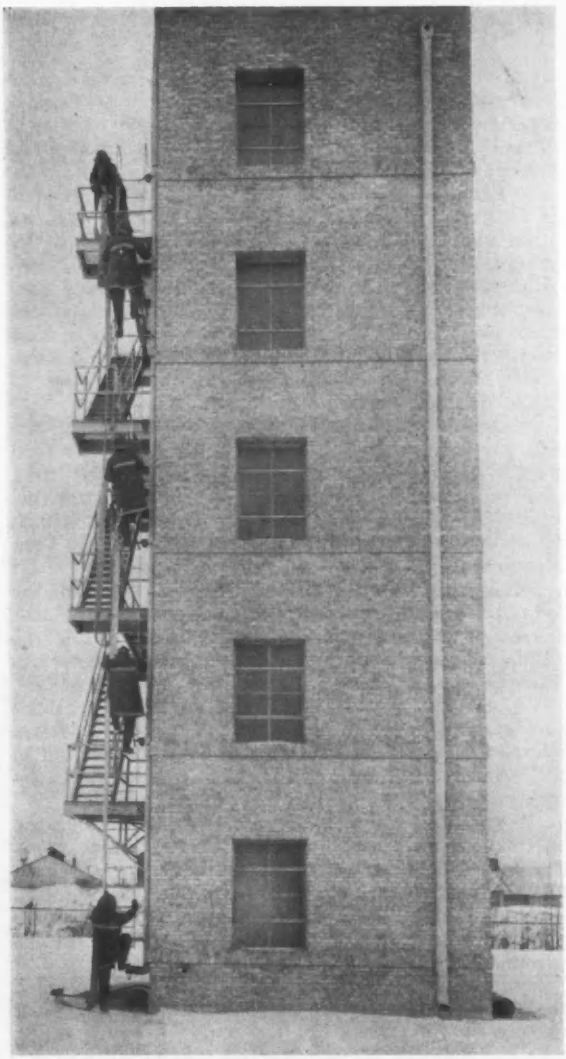
Do not wash the burning gasoline toward buildings. In fact, in many such fires, it would be best to apply the hose streams only on exposed property and permit the gasoline to burn out. Generally, gasoline spill fires will not be extinguished, and hose streams will merely move the spill to another location where the gasoline will burn until completely consumed.

If it is necessary for a fire fighter to attempt to reach the electric switch, he should be protected fully against the fire by good water fog pattern. All men fighting such fires should be wearing full protective clothing, including gloves, helmets, boots and turnout coats.

TRAINING IN

WEST ALLIS WISCONSIN

Many outdoor training operations are conducted in winter months, such as setting up this deluge gun in the snow.



Drill tower of West Allis Fire Department.

JUST to the west of Milwaukee, Wisconsin, is the city of West Allis, which covers a little more than eleven square miles and includes a population of approximately 68,000. The fire department, commanded for the past thirteen years by Chief Henry C. Nelson, can be ranked among the most progressive fire departments in cities of this size. Serving with Chief Nelson are Assistant Chiefs Florian, Luckow, and William Hayes, who command opposite shifts in the two-platoon system under which the department operates. Total membership of the department is about 115 in four engine, two ladder, two rescue companies and a tank truck company located in three stations.

On request from FIREMEN magazine, Chief Nelson forwarded information on the department's training program and facilities, illustrated on these pages. Since a number of fire departments in smaller cities are revising their training programs, this report brings out some interesting examples of what can be accomplished.

Currently, training in the West Allis Fire Department is under the direction of Captain John B. Morch, who serves full time in developing and supervising the program. He is assisted by 16 part-time instructors. Each year, each man in the department undergoes thirty days of basic training and participates in 160 hours of company drills. Officers also receive an average of twenty hours of training each year, and special

training is given to all members in rescue and first aid (16 hours) and communications (2 hours).

Classroom instruction at the fire station or drill school averages 50 hours per man. For training aids Captain Morch uses an overhead projector, a 35 mm. camera and projector and training films obtained from the NFPA Film Library in Chicago and other sources.

The department has developed a special Training Manual with chapters devoted to ladders, hose, rescue, salvage, masks and toxic gases. A new series is being written on apparatus and equipment use and on fire fighting tactics. In addition, the department has also had training in radiological monitoring, flammable liquid fires and aerial ladder operations.

Chief Nelson reports "Aerial ladder drills are supplemented by pre-fire planning operations at factory buildings with the regular ladder companies. This gives our operators a better understanding of their equipment and the proper placement of ladders in an emergency."

As a sidelight to the training program, the department also trains auxiliary rescue personnel and high school students in a special "cadet" program.

Five years ago, West Allis completed its present training facility, located on a triangular-shaped plot approximately 220 feet on each side. The drill field is completely surfaced with bituminous paving except for a concrete apron extending 12 feet from each wall of the five-story drill tower. The tower, constructed of brick facing on steel framing, has reinforced concrete on the first and second floors with removable steel grating on the third, fourth and fifth floors (see cut). On the outside is a 4-inch standpipe with outlets on each floor and the roof, and a sprinkler connection is provided for six sprinkler heads which cover the first floor of the drill tower. The tower is approximately 55 feet high with 10 feet 6 inches between each story and a 4-foot parapet which extends above the roof line. Outside dimensions at the base are 17 by 20 feet.

The walls of the first two stories are 16 inches thick, having an 8-inch concrete block core with 4-inch brick facing on inside and outside of the concrete block. The remaining three stories have brick walls 12 inches thick. The roof parapet has an 8-inch brick wall capped with wood planking covered with sheet metal to resist weather. The west wall has an attached outside 4-inch I.D. standpipe with a 2½-inch fire department siamese at the first story level, and a 2½-inch National Standard thread connection and shut-off valve at the second, third, fourth, and fifth stories and roof level. Another outside feature of the west wall is a fire escape extending from the second story to the fifth story. A cat ladder extends from three feet above ground level to the top of the roof parapet wall and meets the landing platforms of the fire escape at each floor level.

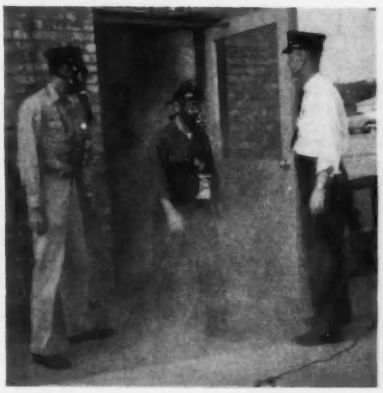
Steel grating on the upper three floors of the tower can be removed to create special rescue problems such as lowering this victim.

Chief Nelson also stated "We have been fortunate in past years to have a very cooperative city. Specialized training on fog and foam application is accomplished on large flammable liquid fires in a local factory yard. Tank fires, spill or pit fires, spray booth, and tractor fires are fought to give our men confidence in themselves and their equipment.

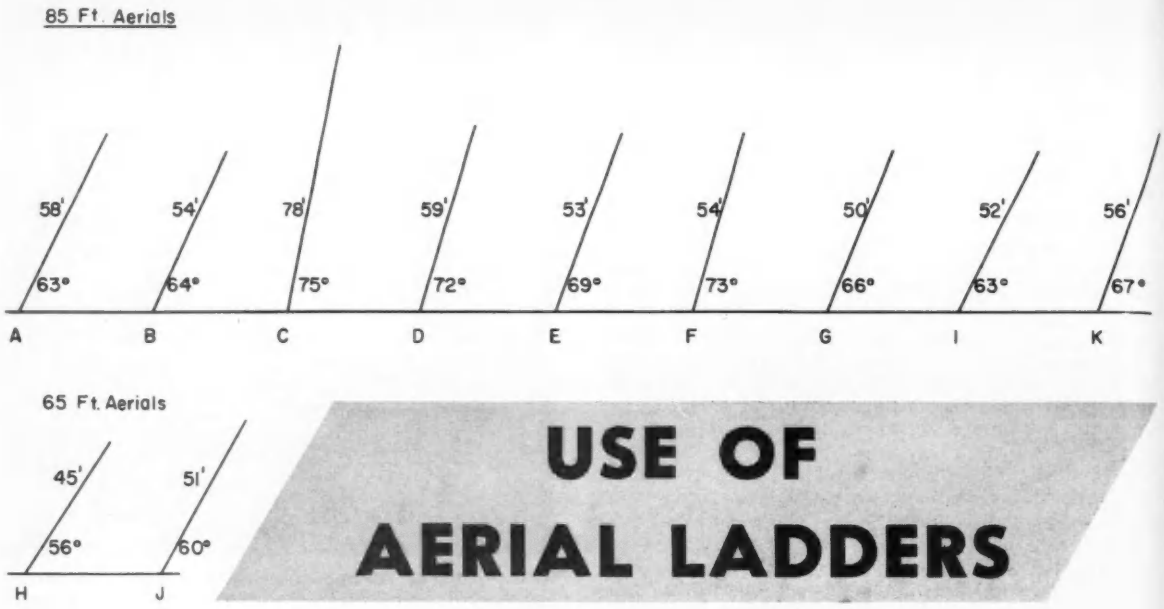
"Houses that must be torn down have been available for training to practice forcible entry, ventilation, opening of floors, walls, ceilings and roofs, and also protecting exposures. The houses are then burned to accomplish all basic fire fighting tactics."

Classroom instruction takes place in fire station adjacent to drill area.

Gas mask training is conducted in smoke room of drill tower. There is also a drafting pit for pump operator's training.



West Allis fire fighters handle a simulated spray booth fire.



USE OF AERIAL LADDERS

by Warren Y. Kimball, Managing Editor

FIREMEN magazine has previously pointed out that, by keeping records of use of equipment, information may be obtained that will provide guidance and justification when new apparatus is needed. A case in point is the operation of aerial ladders at fires. How often are they used? How are they used? What is the need for different sizes of ladders? What is the experience with aerial ladders in different fire districts of the city?

The answers to some of these questions are supplied by a survey of aerial ladder operation in the Boston Fire Department, headed by Commissioner Henry Scagnoli and Chief of Department John Martin. The survey was conducted by the Training Division under the direction of Assistant Fire Chief William Terrenzi. For the purposes of the study, the work of one ladder company in each of the city's eleven fire districts was studied in detail. Nine of these ladder companies are equipped with 85-foot aerial ladders and two are equipped with 65-foot aerial ladders. In addition, the work of the department's seven 100-foot aerials was studied separately. Of the twenty-eight aerials in first line service, in addition to the seven 100-foot ladders, there are fourteen 85-foot and seven 65-foot ladders.

The record of aerial ladder operation is based upon reports furnished by all ladder companies whenever aerials are used at fires. These reports are the counterpart of the reports furnished by pumper operators on the operation of pumps at fires. The reports show the purpose for which the aerial was used, such as rescue, ventilation or advancing lines of hose.

In analyzing the reports the Training Division was concerned with the average length of ladder used and the angle of elevation which would give an indication of the reach required. The analysis also showed the number of times each 85-foot ladder was used in excess of 65 feet and the number of times each 100-foot ladder was used in excess of 85 feet. This could serve as justification for providing the longer ladders. In five of the eleven fire districts the average angle of inclination was below 70 degrees due to parked cars, use on low structures, and buildings set back from the street. The sketches above show the average angle of inclination and the average extension for each ladder studied.

In the districts having 85-foot ladders the use of the ladder above 65 feet varied from 11 to 50 per cent of

TABLE 1. AVERAGE AERIAL OPERATION IN DIFFERENT DISTRICTS

	Area Served	Average Length of Ladder Used (Feet)	Average Angle of Elevation	Percentage of Times Ladder Was Extended Over 65 Feet
A	Industrial, Tenement, Water Front, Business	58	63°	21%
B	Same as above	54	64°	22%
C	Market, Mercantile, Industrial, Tenement, Water Front	78	75°	50%
D	Apartment, Mercantile, Industrial	59	72°	41%
E	Tenement, Industrial, Small Business	53	69°	11%
F	Tenement, Large Industrial, Small Business	54	73°	27%
G	Frame Tenements, Industrial, Small Business	50	66°	23%
H	Frame Tenements, Industrial, Small Business	45	56°	(65-foot ladder)
I	Tenements, Business and Industrial	52	63°	14%
J	One- and Two-Family Residences, Small Business	51	60°	(65-foot ladder)
K	Apartments, One- and Two-Family Residences, Small Business	56	67°	27%

TABLE 2. USE OF 100-FOOT AERIAL LADDERS

	Times Used in Excess of 85 Feet	Percentage of Use Above 85 Feet
1	20 of 43	46%
2	33 of 180	18%
3	64 of 165	39%
4	17 of 84	20%
5	16 of 60	27%
6	19 of 58	33%
7	32 of 57	56%

the time. The data does not show whether the districts served by 65-foot ladders would have used longer extensions had these been available with the companies studied. It is quite apparent that in the district designated as "C" a ladder longer than 85 feet might be desirable as the average extension was 78 feet or within seven feet of maximum extension. This district includes many five- and six-story mercantile and tenement structures. The nine 85-foot aerial ladders were raised more than 144 times in the samples studied. In general, the period under study was six months for the busier companies and up to two years for the companies that used their aerial ladders less frequently.

Table 2 shows the use of 100-foot aerial ladders to indicate the number of times these ladders were extended more than 85 feet. It is quite impressive that in 201 cases, or 31 per cent of the times that these ladders were raised in the period under study, the ladders were used at more than 85-foot extension. Needless to say, as new apparatus is obtained, the department plans to replace some of the present 85-foot aerials with 100-foot ladders in districts where the need for such equipment has been demonstrated. At present, 100-foot ladders are in service in five districts.

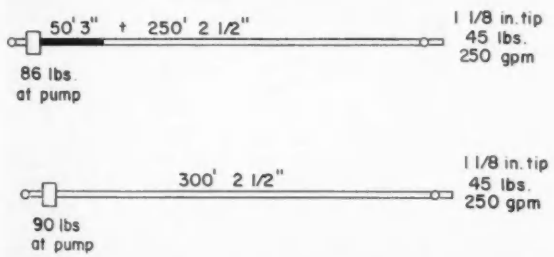
MISUSE OF 3-INCH HOSE

MANY years ago when hose streams depended upon low pressure hydrants or on steam pumpers which gave rated capacity at only 100 pounds pressure, a number of departments adopted the practice of using 50 or 100 feet of 3-inch hose in each 2½-inch line to reduce pressure loss in the hose. The use of 100 feet of 3-inch hose has the practical effect of eliminating pressure loss equivalent to 62 feet or a little better than one section of 2½-inch hose. This was important where pressure at the nozzle of 2½-inch lines otherwise was too low to be effective. However, the practice is of no practical value today because a saving of 4 to 8 pounds is of virtually no consequence where streams are supplied by pumpers.

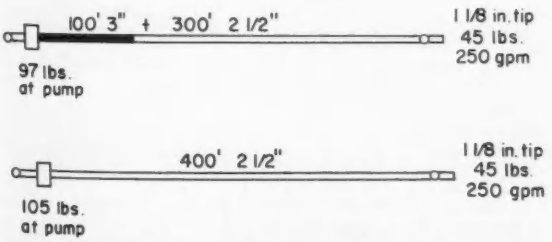
Actually, the use of one or two lengths of 3-inch hose in a 2½-inch line means little change in either pressure or flow. It makes the hose harder to handle and is particularly objectionable when a line is reversed so that the 3-inch hose comes behind the nozzle of a hand line.

The diagrams at left show the difference where one or two lengths of 3-inch hose are used in hose lines of average length.

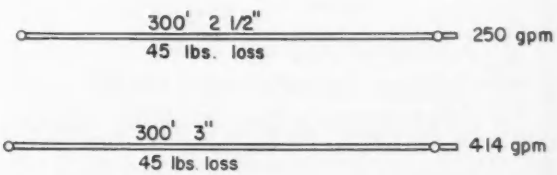
The best way to use 3-inch hose is to have an entire line of this size of hose where it is desired to move larger flows at moderate pressures. At any given pressure the 3-inch hose carries 1.67 times the flow of 2½-inch hose. Assuming 45 pounds is available to move water through 300 feet of hose the flows shown below may be obtained.



As far as pressure loss is concerned, not much advantage is gained by inserting 50 feet of 3-inch hose in a 300-foot line. As shown above, this means that the pump would have to provide 86 pounds pressure to produce 45 pounds at the tip; whereas another 4 pounds of pump pressure (bottom sketch) on 300 feet of 2½-inch line would produce the same 45 pounds nozzle pressure.



On a 400-foot layout, inserting 100 feet of 3-inch hose merely provides a saving of 8 pounds compared with the pump pressure needed to produce the same amount of water and nozzle pressure on 400 feet of 2½-inch line.

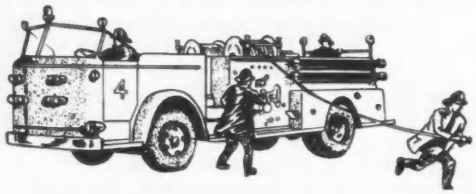


Best advantage of 3-inch hose over 2½-inch hose is secured in a full layout, as shown in these two sketches. For the 300-foot layout, the 3-inch hose provides 164 gpm more than the 2½-inch hose for the same pressure loss.

However, if only 100 feet of 3-inch hose is used in the line the increased flow at the same expenditure of pressure would be only 30 gpm over the line composed entirely of 2½-inch hose.

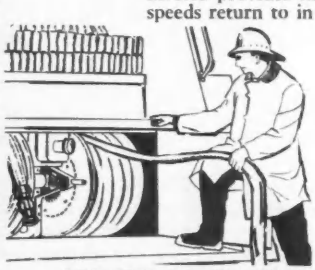
Where fire departments have their 3-inch hose scattered with one or two sections carried in each hose compartment, they would be well advised to collect this hose and load one or more trucks to carry 500 or 1,000 feet of the large hose which can then be used efficiently both for pump feeder lines and for supplying heavy stream devices at large fires.

Did You Know?



BOOSTER HOSE IS USED ON UP TO 85% OF ALL SUBURBAN AND RURAL FIRES AND OVER 50% OF ALL OTHER FIRES

These statistics emphasize the need for the faster, more efficient handling and maintenance of booster hose provided by the modern hose reel. The reel permits instant action with liquid always ready at the nozzle. Rewinding by hand or with electric motors provides neat, compact storage and speeds return to in service status.



200 FEET OF CRL HOSE CAN BE HANDLED EFFICIENTLY ON ELECTRIC REWIND REELS

One man can pay out and rewind CRL hose in less time than is normally required by three or more men when reels are used instead of coiling the hose in the truck bed. Powerful, electric rewind motors with remote switch makes pre-connected collapsible hose handling as simple as handling booster hose. Reels are designed with a capacity up to 200 feet of 1½ inch hose. In addition to faster handling, reels reduce wear and maintenance.

REWIND MOTORS CAN BE MOUNTED IN SIX DIFFERENT POSITIONS ON HANNAY REELS OR MOUNTED SEPARATELY IN THE CABINET

Hannay chain drive reel design lets you put the rewind power where *you* want it for most efficient arrangement of equipment on the truck. Positive chain drive is always perfectly aligned, whether drive motor is mounted on the frame or in any remote position on the circumference of the reel.

For complete information on fire hose reels, send for the pocket-size guide to "Efficient Hose Handling for Fire Fighting Equipment." Read about the features that make Hannay reels the first choice of fire fighters everywhere.

REELS BY HANNAY

CLIFFORD B. HANNAY & SON, INC.
WESTERLO, NEW YORK

33rd FDIC

THE 33rd Fire Department Instructors' Conference will be held in Memphis, Tennessee, February 28–March 3. Sponsored by the Western Actuarial Bureau, the Memphis Fire Department and other Memphis civic organizations, the invitational conference is one of the best fire service meetings of the year, attracting fire department chiefs and instructors from many parts of North America.

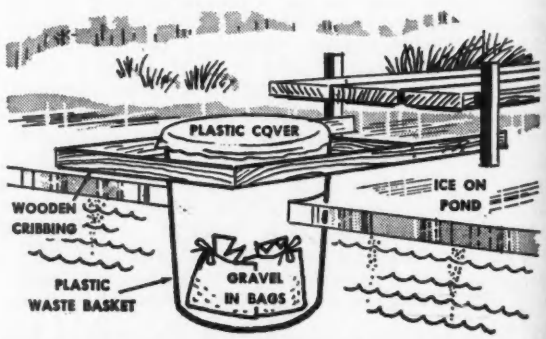
An extensive program has been scheduled for this year's FDIC. Two afternoons have been reserved for outdoor demonstrations: on Monday afternoon water curtains, LP-Gas, protective clothing, elevated platform apparatus, a jet-propelled fire boat and "tricks of the trade" for fire departments will be shown. Scheduled for Wednesday afternoon are demonstrations of fire control of atomic weapons, conducted by the Memphis Fire Department and members of the atomic training group, Sandia Base, Albuquerque, New Mexico. Another demonstration, on flame propagation, will take place on Thursday evening, conducted by two members of the U.S. Department of the Interior.

In addition, at least 25 speakers will be on the program as well as other fire service members in panel discussions. Conference chairman is Emmett T. Cox, Director, Fire Prevention Department, Western Actuarial Bureau. Conference Vice Chairman is Robert F. Hamm, Director, Public Relations, Fireman Training, Indiana Rating Bureau. The Memphis Fire Department, with Chief Edward A. Hamilton as host, will serve luncheons to all conference guests.

Another Tip for Drafting Through Ice

THE December 1960 issue of *The Farm Spokesman* mentioned that an ordinary plastic wastebasket can provide access to water in a frozen pond, even though the ice may be a foot thick. It reported that University of Vermont agricultural engineers used a plastic wastebasket with a close-fitting cover weighted with several stones to hold the top of the wastebasket a few inches above the water. A small wood crib anchored to the dock or the shore kept the basket from drifting.

If a fire department wants to draft from the pond, all that is necessary is to pull the cover off the basket and peel the basket away from the ice. Water flotation will make it pop right out of the hole, which is plenty large enough for the insertion of suction hose. The article reported that with this method you can get through 13 inches of ice in less than 15 seconds. A sketch is shown below.



Plastic wastebasket, weighted with rocks, is held in place by a simple wood crib. Be sure to cover top of basket. To use, peel off cover and pull basket out of ice.

Gasoline Tank Truck Fire

In Lower Allen Township, Pennsylvania, a tank truck carrying 5,700 gallons of gasoline overturned on a highway ramp. Mutual aid response included seven municipal fire departments and the fire brigade from the Mechanicsburg Naval Supply Depot, all supplementing the Lower Allen Township Fire Department under the direction of Fire Chief Glen E. Hawbecker. As shown in the photos, fire fighters used foam and hose streams and managed to save about half of the gasoline. *(Photos by Arthur H. Kramer)*

Chief Officer Collects Badges

SOUTHWORTH LANCASTER, of Cambridge, Massachusetts, a long-time member of NFPA, corresponds with fire service members in many parts of the world. In one of his recent letters, he mentions that Chief Officer E. S. Barber, of the Fire Department, Nigel, Transvaal, Union of South Africa, is collecting firemen's cap badges and would like to hear from other collectors or members of the fire service who have surplus insignia of this sort.

Chief Barber also mentioned the following: "I have just received the latest volumes of the NFPA Fire Codes — they're top notch and one can only wonder what the fire service would be like if it weren't for bodies such as the NFPA." *(Readers may be interested to know that the National Fire Codes have now been expanded to seven volumes due to the increase in size and number of technical standards — Ed.)*

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FIRE HELMETS

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FIRE SERVICE MEETINGS

FEBRUARY

California:

FEBRUARY 17: Marin County Association of Fire Departments, monthly meeting, Corte Madera. Contact W. H. Lane, secretary, 74 Vendola Drive, San Rafael.

Delaware:

FEBRUARY 28: Sussex County Volunteer Firemen's Association, monthly meeting, Bethany Beach Volunteer Fire Company. Contact William J. Quillen, Ocean View.

Indiana:

FEBRUARY 26: Indiana Volunteer Firemen's Association, meeting of State Officers and Board of Directors, Monticello. Contact Harry Fries, secretary, Rural Route 3, Walkerton.

New Jersey:

FEBRUARY 16: Gloucester County Firemen's Association, monthly meeting, Sewell. Contact Walter H. Mattson, secretary, 29 Home Avenue, Gibbstown.

New York:

FEBRUARY 16: Hudson-Mohawk Volunteer Firemen's Association, Inc., regular meeting, Alplaus Fire Department, Alplaus. Contact W. J. Hopmeier, secretary, RD No. 2, Box 202, Schenectady.

FEBRUARY 20: Chenango County Firemen's Association, monthly meeting, Harpursville. Contact Clarence J. Gardner, Jr., secretary, Mount Upton.

Oregon:

FEBRUARY 24: Polk-Yamhill Firemen's Association, monthly meeting, Dayton. Contact Glenn Wick, secretary, 209 Hayter Street, Dallas.

Rhode Island:

FEBRUARY 22: Pawtuxet Valley Firemen's League, monthly meeting, Oaklawn Fire Association. Contact E. F. Fiske, secretary, 34 Pleasant Street, West Warwick.

MARCH

California:

MARCH 17: Marin County Association of Fire Departments, monthly meeting, Belvedere. Contact W. H. Lane, secretary, 74 Vendola Drive, San Rafael.

Delaware:

MARCH 9: New Castle County Volunteer Firemen's Association, monthly meeting, Wilmington Manor Fire Co., Wilmington Manor. Contact Edward Hawthorne, secretary, Box 175, St. Georges.

MARCH 15: Kent County Volunteer Firemen's Association, monthly meeting, Leipsic. Contact Paul B. Smith, secretary, Marydel.

MARCH 28: Sussex County Firemen's Association, monthly meeting, Indian River Volunteer Fire Co. Contact W. J. Quillen, secretary, Ocean View.

Florida:

MARCH 19: Lake County Firemen's Association, regular meeting. Contact John Jackson, secretary, Umatilla.

Illinois:

MARCH 25, 26: Illinois Association of Fire Protection Districts, annual meeting, Hotel Pere Marquette, Peoria. Contact F. E. Poor, secretary, 859 W. Dundee Road, Wheeling.

(*Continued on page 26*)

Street Railway Car for Steam Fire Engines

by NFPA member Harold S. Walker

IN 1896 the fire commissioners of Springfield, Massachusetts, conceived the idea of having a trolley car for the transportation of a steam fire engine over all the lines of the street railway company. By such an arrangement, not only could the engine be rapidly conveyed to outlying points in the city reached by electric cars but valuable aid could be rendered promptly to the nearby communities of Chicopee, Holyoke, Longmeadow and West Springfield.

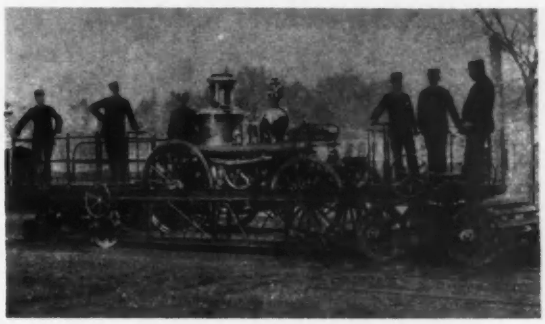
This special trolley was built at the plant of the Wason Manufacturing Co. from designs of Mr. Louis C. Hyde of that company and under patents held by Mr. Hyde. It was stationed at the Hooker Street engine house where it was kept equipped, ready for use.

The design of the car was quite simple and consisted of two trucks surmounted by platforms or decks on which men could ride with hose and other fire fighting equipment. To the rear truck was attached a long platform which connected with the forward truck and upon which the steam fire engine was carried.

To load the engine, the platform was lowered to the rails, then the front truck was disconnected and run far enough away to permit the engine to be backed into position where, by means of a winch attached to the rear truck, the engine could easily be drawn on to the platform. The front truck was then brought back and, by means of chain hoists operated by right and left screws on each side of the truck deck, the front end of the platform on which the engine rested was raised and the side girders locked into place, thus making both trucks and platform a single unit.

The car was so arranged that an electric motor could be attached to the axle of either truck or it could be drawn by an electric locomotive work car or snowplow. At a test by fire department officials a steam fire engine was loaded in 2¼ minutes from the time the car was run into position. In unloading, the front truck was detached in 45 seconds and the horses were attached to the engine and ready to go in 1¼ minutes.

The length of the car from edge of footboard to fender was 30 feet 10½ inches; length over platform railings was 28 feet 8 inches; length and width of engine platform was 13 feet 9 inches and 6 feet 11 inches, respectively; over-all width was 7 feet 10 inches; height from rail to tip surface of engine platform was 9½ inches. It weighed 14,000 pounds.



Here is an Amoskeag steamer, Springfield's Engine 1 in 1897, loaded on the special trolley car.

A Prime Example of Specialized Engineering
by DARLEY

Selected Over Other Makes by Monsanto Engineers

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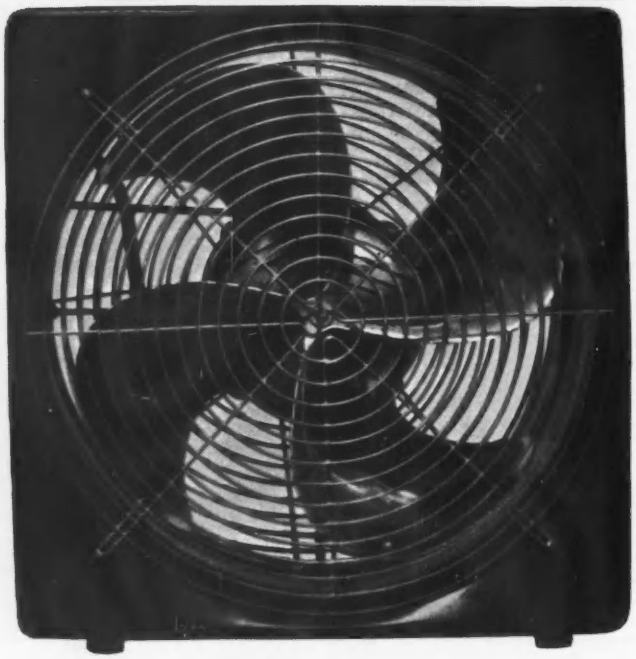
ESTABLISHED 1908

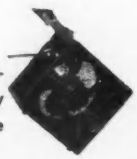
NEW



PLUS 21 4 BLADE DESIGN

HERE IS *REAL* PULLING POWER in the new Super Vac series Smoke Ejectors for fire and rescue work! Redesigned with four blades, the one-piece, cast aluminum propeller now increases the air volume over the entire blade area by 21% — a significant increase for emergency operations where seconds count. So fast, so efficient and so dependable is the "PLUS 21" propeller that it is now standard on all 12", 16" and 24" Smoke Ejectors. This means stepped up controlled ventilation of smoke-congested areas, faster rescue operations, greater safety margins.

New Shape Housing, Too!



New square-shape housing is rescue-designed for easier portability, greater strength, increased stability. It stands firmly on any of its 4 sides in emergency and carries easily (only one man) from any of its 4 corner handles.

Write for complete details now. Please note new address.

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Fire Service Meetings

(*Continued from page 24*)

New Jersey:

MARCH 16: Gloucester County Firemen's Association, monthly meeting (Old Timers' Night), Repaupo. Contact W. H. Mattson, secretary, 29 Home Avenue, Gibbstown.

New York:

MARCH 3: Broome County Firemen's Association, Inc., monthly meeting, Union Center. Contact Glenn Fuller, secretary, Box 79, Port Crane.

MARCH 9: Madison County Volunteer Firemen's Association monthly meeting, Bridgeport, N. Y. Contact Donald Burke, secretary, 51 Fenner Street, Cazenovia.

MARCH 9: Mid-Hudson Harlem Valley Fire Chiefs' Association, monthly meeting, Mase Hook & Ladder, Beacon. Contact Dick Kennedy, secretary, Box 18. Glenham.

MARCH 20: Chenango County Firemen's Association, Inc., monthly meeting, Smithville Flats. Contact C. J. Gardner, Jr., secretary, Mount Upton.

MARCH 28: Orange County Volunteer Firemen's Association, regular meeting, Wawayanda Volunteer Fire Co., Slate Hill. Contact K. V. Fowler, secretary, Harriman.

North Carolina:

MARCH 21: Roanoke Firemen's Association, regular meeting, Roxobel Fire Department, Roxobel. Contact G. R. Ivey, secretary, Enfield.

Oregon:

MARCH 15: Central Willamette Fire Fighters' Association, monthly meeting. Contact E. J. Bell, secretary, Stayton.

MARCH 31: Polk-Yamhill Firemen's Association, monthly meeting, Falls City. Contact Glenn Wick, secretary, 209 Hayter Street, Dallas.

Rhode Island:

MARCH 8: Rhode Island State Firemen's League, quarterly meeting. Contact M. F. Brown, secretary, 84 Englewood Avenue, Pawtucket.

MARCH 14: South County Fire Chiefs' and Wardens' Association, monthly meeting, Exeter No. 2. Contact H. F. Briggs, Jr., Saunderstown.

MARCH 29: Pawtuxet Valley Firemen's League, monthly meeting, Harris Fire Company. Contact E. F. Fiske, secretary, 34 Pleasant Street, West Warwick.

Registry of Public Safety Radio Systems

THE October 1960 issue of *Communication Engineering* is published as the official registry of public safety radio systems. Priced at $4 per copy, the 192-page, 8½ x 11-inch, paper-bound volume includes a listing of the call letters of radio transmitters and frequencies used by public service departments. Twenty-one pages of the book are devoted to fire departments.

In addition to listing the call letters and frequencies of individual fire departments, this section also includes key symbols to indicate the number of mobile units and transmitters in a fire department and the radio equipment manufacturer.

For copies, write to Communication Engineering Book Company, Monterey, Massachusetts.

THIS IS THE SIGN OF ADT

Cooperating fully with municipal authorities concerned with public safety, ADT spares no effort to provide 70,000 service subscribers with the most up-to-date and effective private alarm and supervisory signaling systems.

Fire and police officials throughout the country recognize the sign of ADT. They know that properties with ADT Service are not likely to be the scenes of roaring fires or the objects of successful burglaries.

Last year, for example, automatic burglar alarm signals from ADT-protected properties assisted police in the capture of more than 1,500 criminals. When fires occur in ADT-protected properties, speedy notification enables fire-fighting forces to roll quickly, and thus hold damage to a minimum.

If you would like to receive our monthly publication, The ADT Transmitter, drop us a post card.

AMERICAN DISTRICT TELEGRAPH COMPANY

Executive Office: 155 Sixth Avenue, New York 13, N. Y.

A NATIONWIDE ORGANIZATION

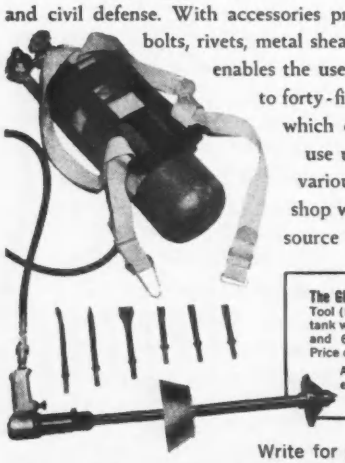
New GLASS-BLOCKSMASHER *Tool*

Glass Block construction that defies axes and other usual fire-fighting equipment, breaks out readily under the impact of this new, easily handled tool. The GLASS-BLOCKSMASHER is designed to smash a large opening in *both front and rear surfaces* of glass blocks in a matter of seconds.

Operating from a special tank of CO_2, the entire apparatus weighs less than 50 lbs. and can be readily carried on a man's back to be operated from a ladder as easily as on the ground.

Versatile: Rescue Kit and Shop Tool

The air gun which drives the GLASS-BLOCKSMASHER can also be used for other emergency procedures or rescue operations involving motor vehicles, air craft and civil defense. With accessories provided, it can cut car doors and fenders, cut bolts, rivets, metal sheathing, open metal drums and the like. The tank enables the use of the BLOCKSMASHER for some thirty-six to forty-five minutes of intermittent use. The smaller tools, which characteristically require more steady use, will use up the gas supply in about twenty minutes. The various accessory tools will find many uses in your shop where the gun can be attached to any convenient source of 90 lbs. pressure.



The GLASS-BLOCKSMASHER Kit includes the B20 Glass Block Breaking Tool (Patent Applied for) – the basic Air Gun to drive it – a 15 lb. CO_2 tank with regulator preset to 90 lbs. – a specially designed harness, and 6 feet of reinforced rubber hose fitted with a Quick Connector. Price complete: $395.

Accessory tools – chisels, punches, and a carrying case for all equipment – are available. Write for prices and information.

Write for prices and information.

Boston Clip and Tag Company
46 Grove Street, Somerville 44, Mass.

Clean-cut, clear, white Register Bond (15# Sulfite) in standard rolls delivered immediately from stock.

For All Single or Multiple Registers

New Members from A to Z!

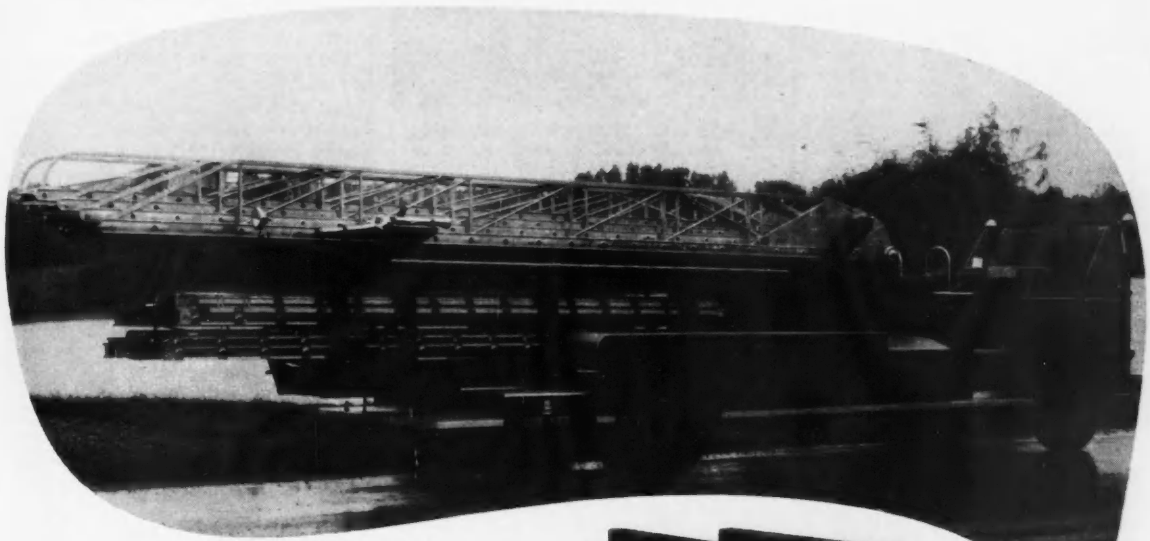
THE year 1960 brought a significant increase in the number of fire departments enrolled as members in the NFPA. Altogether, some 400 fire departments joined the Association as new members from just about every state and province in the U.S. and Canada. As always, these departments represented some of the largest cities and some of the smallest villages and towns, thus presenting an interesting cross section of the fire service.

As announced previously, another increase in membership was registered by larger cities who obtained membership for each of their fire stations. In addition, there was a spurt in the number of individual fire officers, from assistant chiefs down to lieutenants, who took individual associate memberships. Altogether, the fire service representation came from the north, south, east and west of North America. As a sampling of these new members, we present a selected list of names which fall into perfect alphabetical order:

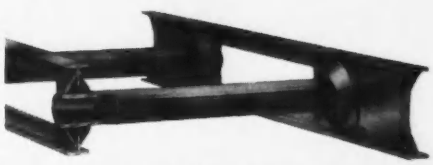
Augusta, Arkansas
Bison, South Dakota
Cross Plains, Texas
Douglas, Alaska
Edwardsville, Illinois
Fayetteville, West Virginia
Globe, Arizona
Hardwick, Massachusetts
Isle, Minnesota
Junction City, Kansas
Kilmarnock, Virginia
Las Cruces, New Mexico
Mercer Island, Washington
North Hampton, New Hampshire
Orangeburg, South Carolina
Pleasantville, New York
Quarryville, Pennsylvania
Ranchester, Wyoming
Seat Pleasant, Maryland
Tillsinbury, Ontario
Unionville, Connecticut
Verona, Wisconsin
Wallowa, Oregon
Xenia, Ohio
Yucca Valley, California
Zeeland, Michigan

"It's complete in every detail, right down to a small book of tickets for the Firemen's Ball."

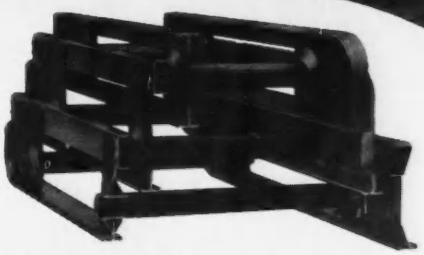
The Alco-Lite Ground Ladders on this Aerial can help save precious minutes at fires



The above Aerial is a product of The Seagrave Corporation, Columbus, Ohio.



Exclusive Alco-Lite design also results in rungs that won't twist, turn, or break-off. Extension ladders feature channel slides that keep sections



from disengaging. Sections extend, lock and unlock simultaneously. Spring-loaded locks automatically lock extended ladder sections.

Because Alco-Lite Aluminum Ladders, like the extension, straight, roof, and jack ladders on the Seagrave Aerial above are lighter in weight, you save precious minutes handling time at fires. Require less physical effort, too. Exclusive gusset-plate, expansion bushing construction makes possible the open siderail, T-channel design that eliminates extra weight-adding bulk without sacrificing an ounce of strength.

Alco-Lite Ladders more than pass all tests for strength and safety. They can't warp, rot, splinter, or burn . . . are not affected by moisture, fumes, or gases. Maintenance is no problem.

Specify Alco-Lite Aluminum Ground Ladders on your apparatus. They're easier to handle, safe, and require almost no maintenance.

Aluminum Ladder Company

FLORENCE S. CAROLINA

ALCO-LITE

Most effective
FIRE ENTRY
with
FIRE KING
by
WHEELER

* "Scotch-Shield"

Sturdy, 3-ply, fire entry suit. Famous Tropic-Weave underwriter's grade aluminized* asbestos as outer layer. 100% wool middle layer. Neoprene coated fiberglas inner layer is vapor and liquid barrier against acids, live steam, etc. Hard hat built into helmet . . . pyrex vision piece . . . federally approved one-piece zipper . . . ample room for *air* pack inside. The standard for industrial and municipal departments. Ask your distributor or write.

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Issue effective commands in fire-fighting. Powerful, light, transistorized units. 3 rugged styles . . . pin-point or flare sound patterns.

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Complete details on Fire King, Megaphones, Proximity Suits and many other items. Get your copy today!

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WHEELER

ANY WATER SOURCE NOW USEABLE!

The new Float Dock Strainer makes most any stream or pond useable for fighting rural fires or for filling your tanker. Float Dock will draft in deep or shallow water — off the bottom and drafting always the cleanest water with never a whirlpool or loss of suction at any time. Saves wear on your pump, too.

Strainer drafts just below the surface and down to the last few inches.

WRITE your distributor or manufacturer for brochure and prices. Specify hose size.

Manufactured Only By
FOL-DA-TANK COMPANY
Box 361, Rock Island, Illinois

CIRCUL-AIR
FIRE HOSE DRYER

The patented, electrically operated Circul-Air hose dryer circulates pre-warmed fresh air through loosely coiled hose at the rate of 5 to 6 air changes per minute. No other drying method is so fast — so economical — so easy to use.

ACCEPTED — APPROVED — RECOMMENDED

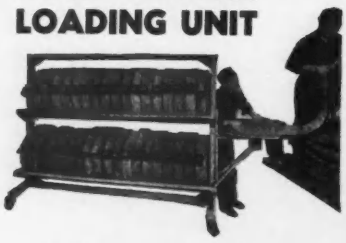
OVER 6,000 DEPARTMENTS
CIRCUL-AIR THEIR HOSE

Porto-RAK

The fast, modern way to handle, store and load hose.

Saves valuable space. Holds 1,800 ft. of 2½" hose — proportionately more of 1½" — in an 8 ft. space (when loading table is detached). Roll it right up to the truck for reloading — out of the way when not in use. Equipped with locking fiber-wheeled casters.

HOSE STORAGE LOADING UNIT



WRITE FOR FOLDER

THE CIRCUL-AIR CORPORATION
575 EAST MILWAUKEE
DETROIT 2, MICHIGAN

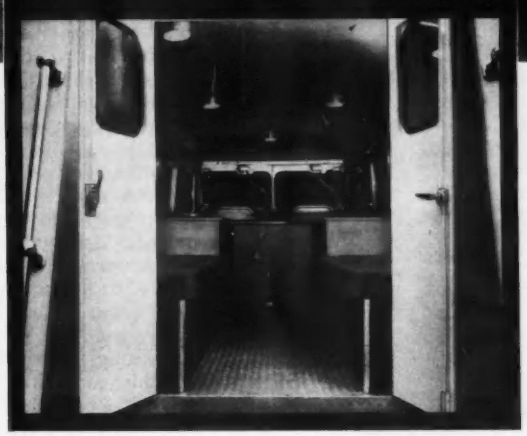
"First Aid Practices"

THE revised third edition of *First Aid Practices*, another in the Red Book series, has just been published by Oklahoma State University, Stillwater, Oklahoma. Featuring new illustrations and text, the manual presents first aid information that would be useful to fire departments and rescue squads. The 64-page, 8½- x 11-inch, illustrated booklet can be obtained for $1.50 per copy by writing to the Fire Protection Department, Technical Institute, Oklahoma State University, Stillwater, Oklahoma.

A Long Ladder, Just in Time!

A NEW 100-foot aerial ladder truck was assigned to Truck Company No. 28 of the Los Angeles City Fire Department on October 7, 1960. Its very first run was to work at an 8-story apartment building fire. Because of its reach, the ladder provided prompt access in spite of abnormally bad obstruction by parked automobiles. This ladder is one of six currently being put into service. When all six are added, Los Angeles will have eleven 100-footers in service. (*Photo by Los Angeles Fire Department.*)

IS THIS THE STYLE FIRE-RESCUE UNIT YOUR DEPARTMENT NEEDS?



Fort Worth rescue squad enjoys extensive storage compartments without sacrificing first aid facilities!

Fort Worth uses this new custom-built Gerstenslager rescue unit to answer all alarms along with the regular fire-fighting units. It carries special equipment for breaking into burning buildings, provides ample cot capacity, first aid facilities and a variety of other tools for their type of operation.

This completely enclosed unit is well insulated and ventilated for year-around comfort. Inside cabinets store first aid equipment, other material is stowed in outside-opening compartments.

Gerstenslager can custom-build a fire rescue unit that is just right for your local needs. Write, wire or phone now. A nearby and experienced representative is ready to help you with your planning. There's no obligation.

THESE ARE SOME OF THE FEATURES!

International Harvester chassis B-164 with 171" wheelbase. Low silhouette and low center of gravity. Leece-Neville alternator with a 1200 watt capacity 110 volt transformer for floodlighting. Extensive compartmentation makes all tools and equipment quickly available. Fully equipped with all proper warning and signal lights. Federal Model C-5 Siren.

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Most effective
FIRE ENTRY
with
FIRE KING
by
WHEELER

* "Scotch-Shield"

Sturdy, 3-ply, fire entry suit. Famous Tropic-Weave underwriter's grade aluminized* asbestos as outer layer. 100% wool middle layer. Neoprene coated fiberglas inner layer is vapor and liquid barrier against acids, live steam, etc. Hard hat built into helmet . . . pyrex vision piece . . . federally approved one-piece zipper . . . ample room for *air* pack inside. The standard for industrial and municipal departments. Ask your distributor or write.

POWER MEGAPHONES

Issue effective commands in fire-fighting. Powerful, light, transistorized units. 3 rugged styles . . . pin-point or flare sound patterns.

Send for FIRE FLYER

Complete details on Fire King, Megaphones, Proximity Suits and many other items. Get your copy today!

WHEELER PROTECTIVE APPAREL, INC.
244 W. Huron St., Chicago 10, Ill.

WHEELER

ANY WATER SOURCE NOW USEABLE!

The new Float Dock Strainer makes most any stream or pond useable for fighting rural fires or for filling your tanker. Float Dock will draft in deep or shallow water — off the bottom and drafting always the cleanest water with never a whirlpool or loss of suction at any time. Saves wear on your pump, too.

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Saves valuable space. Holds 1,800 ft. of 2½" hose — proportionately more of 1½" — in an 8 ft. space (when loading table is detached). Roll it right up to the truck for reloading — out of the way when not in use. Equipped with locking fiber-wheeled casters.

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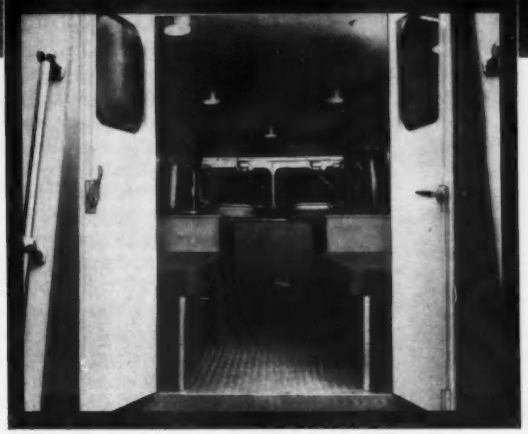

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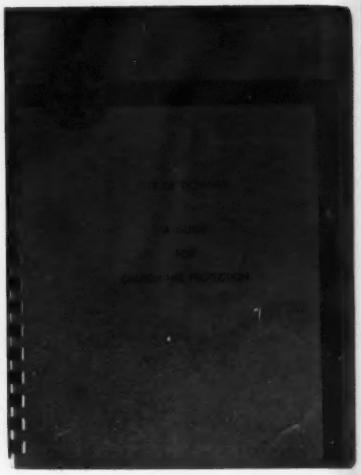
THE GERSTENSLAGER COMPANY • WOOSTER, OHIO • PHONE AN 2-2015
CUSTOM BODIES SINCE 1860

Downey Fire Department Develops Guide for Churches

DURING the past Fall, the fire department in Downey, California, headed by Chief Engineer Robert W. Gain, gave special attention to a fire prevention program for churches. Downey, with a population of 80,000 plus, is just southeast of the city of Los Angeles. As a good-sized municipality, it has a number of church properties.

The Downey Fire Prevention campaign for churches originated partly from a safety program developed for the First Presbyterian Church by Captain William E. Burke of the Bureau of Fire Prevention and Miss Alice F. Johnston. The initial program was received with such enthusiasm that it was referred to the Ministerial Association. Subsequently, it was expanded for general distribution to all churches.

The Department developed a special brochure to be presented to the church administrators. This is an 8½- by 11-inch booklet which includes 21 pages of mimeographed instruction, supplementary booklets and illustrated material published by insurance organizations and fire equipment manufacturers. One of the most important inserts is a sheet on which administrators can draw floor plans of churches and church schools to discuss fire exit drills with fire department members.



Also included in the brochure are sections discussing church fire losses, general fire protection for churches, inspection, fire exit drills for church schools, local regulations on public assembly and reference to other publications with more information.

Particular attention is given to instruction for church administrators on fire exits. Among other things, this covers the elements of fire exit drills, fire alarm signals and devices, floor plans, direction cards for exits, instructions to teachers and ushers and designation of assembly areas.

Another informative section covers local regulations on public assembly and mentions such items as: permit required; decorative material; wearing apparel safety standards; exit doors; aisles; ash trays; fire appliances; plans of exit ways and aisles; authority of fire chiefs to correct overcrowding; obstruction of aisles; occupant loads; posted room capacity; exits and open flames.

Immediately following this section is a page listing names and addresses of fire protection organizations such as the National Fire Protection Association, the National Board of Fire Underwriters, Underwriters' Laboratories, the Factory Insurance Association and the National Safety Council.

Chief Gain reports "Using Fire Prevention Week activities and promotion together with this brochure, we are currently engaged in developing floor plans, fire exits and escape routes from each church building . . ."

This well-planned brochure obviously puts helpful information into the hands of church administrators in Downey. Other fire departments might find this type of fire prevention program a useful means of impressing persons responsible for assembly of large groups of people.

you can always count on E&J dependability

THE ICR MODEL

RESUSCITATOR • INHALATOR • ASPIRATOR

Simplified operation is assured by the ICR control center. It has the *exclusive* E&J Precision Flow Control Valve, permitting *precise oxygen flow* for difficult cases. The lower selector switch sets the unit for resuscitation, inhalation, or aspiration. Pre-set pressures and automatic action assure safe, continuous operation for all emergency needs.

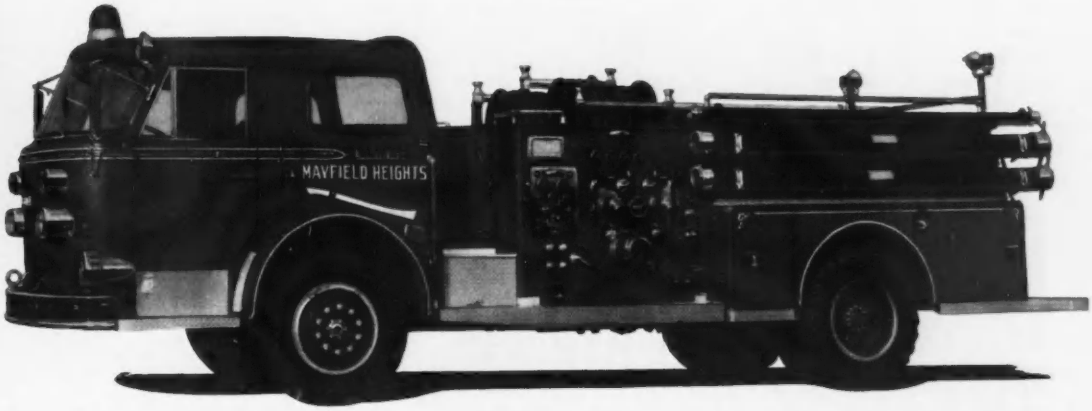
• *See the rugged and efficient ICR Model in action. Ask your E&J dealer for a demonstration, or write Dept. F-2 for bulletin No. 2434-BB.*

OHIO Ohio Chemical

Ohio Chemical & Surgical Equipment Co., Madison, Wis.; Ohio Chemical Pacific Co., Berkeley, Calif.; Ohio Chemical Canada Limited, Toronto, Canada; Airco Company International, New York City (Divisions or Subsidiaries of Air Reduction Company, Inc.)

AMERICAN LAFRANCE

Leadership



has given the Fire Service the most important features for greater operating efficiency

Many of these important Extra Value features engineered and introduced by American LaFrance have become a fire service standard. Some of these features are:

- **Cab-Ahead-of-Engine Design:**
  - **Greater safety and better visibility for the driver**
  - **5 man seating**
  - **Shorter turning radius**
  - **Equipment compartments — 7 enclosed, 2 open.**
- **300 gallon water tank, standard.**
- **Shock absorbers front and rear.**
- **Most complete power range of conventional engine sizes.**
- **Gas turbine power.**
- **Torque converters.**
- **Twinflow pumps for all NBFU ratings.**

The SPARTAN 1000 g.p.m. Class A pumper shown above includes these features plus many others. The ability of American LaFrance to engineer your specific requirements into custom built fire engines is indicated by the following features incorporated in this fire engine:

- A closed compartment for housing pre-connected 3 inch soft suction (22 feet long coupled 2½ inch) each side of the body. This provides for faster hydrant connection with weather protection for the hose.
- Enclosed rear compartment for an air and oxygen mask with shelves for spare cylinders storage.
- Seat belts for 5 men — Power steering.
- Discharge pressure gauges for each outlet.
- Two pre-connected 1½ inch hose lines.
- 2-way radio in enclosed compartment.
- Hobbs hour meter to record hours of engine operation.
- All 2½ inch discharge outlets angled for easier hose connection.

Everything you need to fight fire!

APPARATUS · HOSE & NOZZLES · INDUSTRIAL & REFINERY SYSTEMS · FOAMITE & CHEMICALS · HOME, MARINE INDUSTRIAL EXTINGUISHERS

AMERICAN LAFRANCE

A DIVISION OF STERLING PRECISION CORPORATION

ELMIRA, N.Y.

LaFrance Export Corporation
Elmira, N. Y.

LaFrance Fire Engine and Foamite, Ltd.
Toronto 18, Ontario, Canada

The World's First and Largest Makers of Fire Fighting Equipment

Realistic School Fire Drill

LAST September, a regional fire school in Wayne County, Ohio, featured an interesting mutual aid exercise by volunteer and professional fire fighters. The three-day school brought attendance from more than 350 firemen from Wayne, Stark, Summit and Portage Counties. Chief Harrison Arnold, of Wooster Township, served as host. Featured during the fire school was a simulated burning of an elementary school, with realistic fire incidents planned by Chief Sal Trainer of Sebring and former fire chief Charles Getz of Loudonville.

The mutual aid plan was put into effect by a telephone call reporting a fire at the elementary school. Volunteer fire fighters from Apple Creek, Fredericksburg, and Wooster and professional fire fighters from Wooster responded with fire apparatus, ambulances, and fire fighting equipment.

Boy Scouts were scattered throughout the school building feigning injuries, and members of the Women's Auxiliary acted as school teachers. Heat, smoke and flame were simulated in the building by various signs and symbols. Explosions, injured firemen, lack of water and other incidents were injected into the operation to hinder the firemen's normal fire fighting procedure.

Pumpers, and aerial ladder trucks and other emergency equipment were operated in accordance with established mutual aid plans. Communications between fire departments, hospitals and other agencies were also part of the drill.

The exercise gained considerable public attention and newspaper coverage as well as providing realistic training and operations beyond basic fire fighting which every fire department can encounter during a typical school fire. A list of some of the "handicaps" and interruptions which confronted fire fighters as they proceeded on their normal tasks is shown below:

Men on hose line at stage door have gone in too far without masks.

There's only a little water left in the tank truck. Where will you get more?

Nearly out of water and the tanker is not back yet. Supply cannot last more than three minutes.

Fireman slipped and fell in the corridor. Says his back pains severely and he cannot move his legs.

Who is keeping a record of injured as to name, injuries, treatment? Where and by whom were they sent?

Has the hospital been notified of this tragedy?

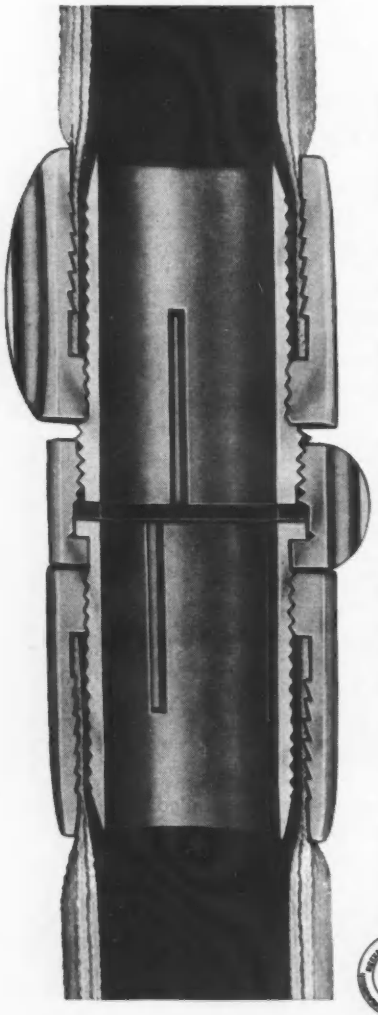
Have you asked for more doctors from surrounding areas?

Has anyone asked the radio station to ask the public to stay a reasonable distance from the school?

Has anyone notified the parents of the students?

Three firemen have collapsed on the auditorium floor.

Second section of hose coming from your pumper has pulled loose from the coupling.



Put BAR-WAY in your "specs"

THE REUSABLE HIGH PRESSURE COUPLING THAT GIVES A QUICK, SURE CONNECTION FOR ALL TYPES OF JACKETED HOSE.

The simplified streamlined design of this precision coupling, which is basically the same as that of your booster hose, guarantees full flow, full pressure and ease of handling under all conditions. Fast emergency hose repairs can also be made in the field if you specify Bar-Way for original application.

Demand Bar-Way reusable couplings on your jacketed hose and watch your efficiency go up and the cost go down.

1½" and 2½" Conventional Wing Lug in production. All other standard sizes and lug styles available. Special engineering applications on request.

UL TESTED for 1400 lbs. pressure and 2400 lbs. pull under full pressure.

BAR-WAY BAR-WAY MFG. CO., STAMFORD, CONN.

"Never mind how I'm going to explain it. . . . Just cut it off!"

Where Credit Is Due!

THE December 1960 issue of FIREMEN magazine featured a remarkable series of photographs showing a Newark, New Jersey, fire fighter giving mouth-to-mouth resuscitation to an infant. Unfortunately, at the time of publication, the name of the photographer who took the pictures was not available, so that appropriate credit was not given for them.

Letters from Chief Engineer Fred Waidelick and Battalion Chief James L. Donlon, of the Newark Fire Department, clarified this matter promptly. Both chief officers pointed out that the pictures were taken by Richard Lowey, a staff photographer with the Newark *Evening News*.

Chief Donlon wrote, "Dick, who is also chief of the Auxiliary Firemen here, has been riding with me since my days in Rescue Company 1, and that goes back some eleven years. I worked the fire, reported in the article, and Dick was riding with me that night, which may explain the pictures taken in the early stages of the fire."

Accordingly, for his excellent contribution to the annals of fire photography, we are pleased to give Dick Lowey his deserved credit for the series of pictures in the article "The Vital Moment." We are also pleased to publish a picture of him in full turnout gear, as shown below.

Richard Lowey, Photographer, Newark *Evening News*.

Question: What is the recommended maximum size of a water tank on an aerial ladder truck?

Answer: See footnote to Paragraph 6111, NFPA Standard No. 19, Specifications for Motor Fire Apparatus, 1960 edition.

The "FOUR-MOST" Equipment

for Modern Fire Fighting and Rescue Work

AIR-PAK **INHALATOR**

HYDRO-PAK Scott **SCOTTORAMIC MASK**

Modern Fire Fighting means fire attack. It calls for a fast entrance to fight fires at their source. The Scott Air-Pak can be donned in seconds to get men in fast—with complete breathing safety, to reduce fire losses and increase efficiency of rescue work. Model illustrated provides a minimum of 30 minutes of protection at extreme exertion.

The Scottoramic Mask provides unlimited vision in all directions. Helps wearer keep out of danger zones. Makes rescue work safer and surer. Replace your old face pieces now with the modern Scottoramic.

Modern Fire Fighting includes, too—trained personnel and equipment to render first aid to the rescued. A Scott Oxygen Inhalator will help keep smoke and accident victims alive until the ambulance arrives.

A modern Fire Service must also include water rescue work and underwater search. The Scott Hydro-Pak has a full face mask for wide-area underwater vision. It is the world's finest and safest underwater breathing equipment.

Scott **AVIATION CORPORATION**

236 ERIE STREET, LANCASTER, NEW YORK

Export: Southern Oxygen Co., 3 West 57th Street, New York 19, N.Y.

Canada: Safety Supply Co., Toronto — Branches in Principal Cities

SCOTT AVIATION CORPORATION • 236 Erie Street, Lancaster New York

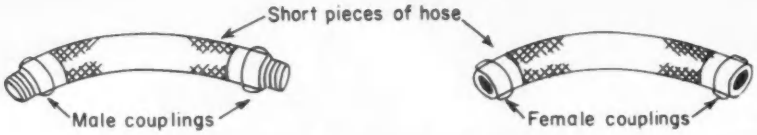
Please send me the following literature and prices:

- ☐ Scott Air-Pak Brochure, 2-color, 6-pages.
- ☐ Scottoramic Mask Sheet 2-color.
- ☐ Scott Demand Inhalator Brochure. 2-color, 6-pages.
- ☐ Scott Hydro-Pak. 8 pages, profusely illustrated.

NAME _____ TITLE _____

ADDRESS _____

CITY _____ ZONE _____ STATE _____



Reverse or Double Couplings

IN a number of fire fighting evolutions it is desirable to have extra sets of double or reverse couplings (double male and double female connections). In case money is not available for purchasing additional sets, they may be easily made from two sets of serviceable couplings cut from old hose. If facilities are available, the two male couplings may be brazed together and the two swivel or female couplings may be brazed together. However, in many cases all that is necessary is to attach the couplings to 12- to 18-inch lengths of fire hose in the normal way by means of expansion rings. The illustrations above show how this is accomplished. Pumper operators can put these connections to good use.

Versatile, Low-Cost Fire Protection for Town and Country

Gets to the blaze fast. Low center of gravity for faster speed, greater mobility over rough terrain. Available mounted or unmounted.

Top fire-fighting efficiency. 200 gal. per minute discharge; up to 3000 gal. tank. Self-priming pump, PTO operated for steady stream delivery. Water can be discharged while tanker is moving. Suction hose and strainer allows replenishing water supply from any available source.

All extra equipment, no extra frills. Hand tools, extinguishers, fog nozzles, ladders included. The Baughman Fire Tanker is kept low in weight, low in cost — without sacrificing capability.

- One piece rust-proof welded tank, removable top for easy cleaning.
- Exclusive Baughman jack system relieves weight at rear of Tanker, permits more water to be held while parked.
- Safe semi-enclosed rear riding platform.
- Rotating beacon light, spot lights, siren.

Better service through better engineering.

Service and parts from 200 dealer branches.

Write for illustrated Bulletin A-429. *Demonstrations Available*

BAUGHMAN MANUFACTURING COMPANY, INC.

317 SHIPMAN ROAD • JERSEYVILLE, ILLINOIS

6044

Limited Access Highways

ARE you having any problems with limited access highways in your territory? If so, the NFPA would like to know about them.

One state fire marshal has reported that in his state fire apparatus frequently has to go up to 25 miles to get on the highway to respond to fires in their own districts. In another state, fire fighters have been required to pay tolls out of their own pockets when transporting emergency ambulance cases. A past president of the International Association of Chiefs of Police reported that many lives had been lost from crashes on a toll highway passing through his city because of an average 10-mile run for ambulances to get on or off the limited access highway due to lack of emergency access roads. On most limited access highways there are no emergency phones or call boxes which the public can use to promptly report fires. Fire equipment provided is expected to be manned by highway maintenance personnel.

The NFPA Committee on Rural Fire Protection, concerned about this problem, has adopted a resolution to investigate what might be done to improve fire protection on the 40,000 miles of limited access interstate highways in use or under construction in the United States. Thousands of people and millions of dollars worth of property are being transported daily, including all sorts of hazardous materials. NFPA General Manager Percy Bugbee has suggested that readers of FIREMEN might want to report experiences that would be helpful in dealing with this growing fire protection problem.

If you can provide information on this subject, write to NFPA FIREMEN magazine, 60 Batterymarch Street, Boston 10, Massachusetts.

"Who made the coffee?"

GOOD BUYS FOR 1961!

Save dollars by getting these useful sets of fire fighters' books

The "Fire Ground Library"

1 ✓

$14.00 worth of books in attractive holder for only

$9.75

Including:

- "Operating Fire Department Pumpers" — $4.00
- "Handling Hose and Ladders" — $2.50
- "Attacking and Extinguishing Interior Fires" — $3.75
- "Fire Fighting Tactics" — $3.75

"Fire Fighter's Manuals"

2 ✓

$18.00 worth of books in attractive holder for only

$14.75

Including:

- NFPA "Inspection Manual" — $4.00
- "Respiratory Hazards of the Fire Service" — $4.25
- "Fire Protection for Chemicals" — $3.00
- "Fire Department Terminology" — $2.00
- "Radiation Control for Fire and Other Emergency Forces" — $4.75

"Fire Station Reference Set"

3 ✓

Combines the nine books in the above two sets

$32.00 worth of books in attractive holder for only

$24.00

National Fire Protection Association
60 Batterymarch Street, Boston 10, Mass.

F-2-61

Please send me:

1. ☐ The Fire Ground Library
2. ☐ Fire Fighter's Manuals
3. ☐ Fire Station Reference Set

☐ A check for $.....enclosed
☐ Please bill me

Name.....

Address.....

City.....State.....

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EXCEPTIONAL CAREERS FOR

FIRE INVESTIGATORS

Be a JOHN A. KENNEDY-Trained

INVESTIGATOR — by MAIL...

There is a vast, growing need for progressive men properly trained for tracing the cause and origin of fires . . . for affixing responsibilities . . . for testifying before courts . . . for proving FACTS . . . for training other people in fire investigation . . . for an insurance investigation career after retirement.

Today **INVESTIGATIONS INSTITUTE** graduates are successfully conducting investigations for city, suburban, sheriff and state fire, police and prosecuting departments . . . for insurance companies . . . for adjusting firms . . . for mail-order houses and many other concerns.

These men have benefited RIGHT AT HOME from the nation's foremost authority—having received the personal supervision of Mr. John A. Kennedy, noted fire and arson investigator, author and teacher — famed for his establishment of the Chicago Fire Department Arson Squad. This course is licensed and authorized by the State of Illinois Department of Registration and Education.

INTRODUCTORY OFFER

Each full term student will receive a free, autographed copy of Mr. Kennedy's new 486-page book, **FIRE AND ARSON INVESTIGATION** on sale in the field for $20.00.

For free brochure describing the I. I. Course, clip and mail this coupon.

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53 W. Jackson Blvd., Chicago 4, Ill.

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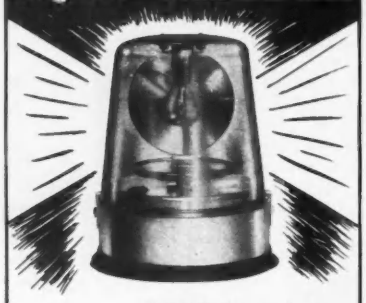
MAGNA-VAC

Magnetic—Sticks Like Glue



New **360° Revolving WARNING LIGHT**

SELLING LIKE HOT CAKES!

No one can believe the price!

What a light! Plugs into cigarette lighter. Holds like grim death. Six magnets. Silent motor. Revolving reflector. 60 powerful flashes a minute. Red, blue, or amber dome. Ideal for wreckers, service cars, ambulances, volunteer fire and police at a price they can afford. 7" tall, 5" dia.

ASK YOUR JOBBER OR WRITE US TODAY!

TRIPPE MFG. CO., Dept. FN
133 N. Jefferson St., Chicago 6, Ill.

REACH THE YOUNGSTERS!

"SPARKY" and JUNIOR FIRE DEPT. BADGES
Actual Size — 1⅝" Diameter

Here are two first quality, low-priced items for your Spring Clean-Up Campaign in Schools and your Junior Fire Dept. Program.

- **"SPARKY" FIRE DEPT. BADGE**
- **JUNIOR FIRE DEPT. BADGE**

With your community name stamped on the Junior Fire Dept. Badge:

15c each in lots of 500
plus postage

Standard "Sparky" Fire Dept. badges are 15c each in dozen lots plus postage.

Send 20c for sample badge to

ROBERTS CO.
BOX 444D WAYLAND, MASS.

Firemen's Training in the Months Ahead

Arizona: The 9th Annual Arizona Fire Training School will be held at Phoenix College, Phoenix, October 19–21. Contact Assistant Chief Jake Siken, director, Phoenix Fire Department, 49 South First Street, Phoenix 4.

Delaware: The Annual Fire School of the Delaware Volunteer Firemen's Association will be held at the Camden-Wyoming Fire Co., Camden, April 22–23 and April 29–30. For details, contact Emanuel Harkins, director, 1909 Newport Gap Pike, Cranston Heights, Wilmington.

Illinois: The 37th Annual Fire College will be held June 12–15 at University of Illinois, Gregory Hall, Champaign. For details, contact Roy W. Alsip, secretary, Illinois Firemen's Association, Inc., P.O. Box 8, Champaign.

Indiana: The 8th Annual Industrial Fire Control Conference will be held at Purdue University on April 4–6. For information, write Professor Shelby Gallien, Seminar Director, Public Safety Institute, Purdue University, West Lafayette.

The Indiana State Fire School will be held September 14–17 at Purdue University, Lafayette. Contact Professor Shelby Gallien at the above address.

Iowa: The Fire Department Instructors' Conference will be held April 18–21 at Iowa State University, Ames. June 13–16 are the dates set for the 37th Annual Iowa State Fire School, while the Annual Fire Department Instructors' Short Course will be held August 1–4. For details, write Keith Royer, supervisor, Firemanship Training, Iowa State University, 110 Marston Hall, Ames.

Minnesota: The Minnesota State Fire School will be held April 24–27 at the University of Minnesota, Minneapolis.

Nebraska: The 24th Annual Nebraska State Fire School will be held at the Municipal Airport Grounds, May 5–7. For details, contact Russell D. Salak, secretary, Nebraska State Volunteer Firemen's Association, Box 312, Schuyler.

North Carolina: The North Carolina Fire College and Pump School will be held at Charlotte, on May 22–26. For details, write Chief Charles L. Burkett, Director, Fire Department Headquarters, Salisbury.

North Dakota: The 7th Annual North Dakota Fire Officers' Conference will be held March 27–29 in Jamestown.

The annual Instructors' School will be held in Bismarck on May 15–17. For details, write J. K. Eckes, executive secretary, North Dakota Firemen's Association, Killdeer.

Ohio: The 7th Annual Central Western Firemen's Association Free Fire School will be held at West Alexandria, April 8 and 9. For details, write Chief W. H. Cheesman, 309 Briarcliff Road, Dayton 15.

Washington: The Officers' Training Command School will be held in Yakima, April 10–14. For details, write Lyle Goodrich, Supervisor of Firemen Training, State Board for Vocational Education, 305 Marfran Building, 500 Aurora Avenue, Seattle 9.

Wisconsin: The 25th Annual Fall Fire School will be held September 10 at the Green County Fair Grounds, Monroe.

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This Month's News and New Products

ESB Activerters

Just developed is a fully transistorized, multi-service unit called the "Activerter" which provides 110 volt alternating current from a 12 volt storage battery. Made in four models with capacities from 150 to 500 watts, the unit can also serve as a fast or slow charger for 6 and 12 volt batteries. It is available as a simple inverter, as an inverter-charger, or as a completely self-contained unit. Shown above is the 500 watt "Pak-O-Power" portable unit with self-contained 12 volt battery, inverter, charger and car-start leads. For further information, write The Electric Storage Battery Company, Dept. G, P.O. Box 6266, Cleveland 1, Ohio.

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New Address for American LaFrance

In order to improve service facilities for fire departments and industrial organizations, the American LaFrance district office at Kansas City, Missouri, has moved to larger and more modern quarters at 2020 Broadway, Kansas City. The new telephone number is HArrison 1-2177.

•

Ask *Maxim Motor Company, Middleboro, Massachusetts*, for the full story on the recently announced "S" Model pumper. . . . Looking for UL listed fire detectors? Check on "Life Saver" Model F by *Fire Alarm Thermostat Corporation*, 53 West 23rd Street, New York 10, New York. . . . Moved to a new location with more space and improved manufacturing facilities is *Sireno Signal Manufacturing Corporation*, 67 Passaic Avenue, Kearny, New Jersey, makers of "Sky-Lighter" vehicle warning lights and "Atomic Rocket" sirens.

BUYING NEW EQUIPMENT?

Consider the products advertised in this issue.

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New Two-Way Radio

A compact 15-watt two-way radio for use in the 144-174 mc band is now being produced by Allen B. DuMont Laboratories, Clifton, New Jersey. Designed for split-channel frequencies, Model 326A has a 3- x 5-inch speaker and only two basic controls. One is a double-function power switch which includes battery drain-saving circuitry, and the other is a combination volume and squelch control. Optional features are dual frequency transmitters and coded squelch. Weight of the "Transicom" 326A is 14 pounds. Dimensions are: 4¼ inches high, 8⅜ inches wide and 12 inches deep.

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For parades, trophies and conventions, the 19-inch-long Fire Trumpet should be considered. Write *Long Island Metal Emblem Company, Inc.*, P. O. Box 486, Merrick, Long Island, New York. . . . Rescue and first-aid squads should know about a new, lightweight, all aluminum splint allowing for use over shoe or boot announced by *H. L. Holden Company, Inc.*, Keene, New Hampshire. . . . *Motorola, Inc.'s* "Handie-Talkie" Pocket Transmitter, fully transistorized, operates on standard VHF two-way mobile communications frequencies.

Howard Cotter III, Narberth, Pennsylvania, former deputy fire marshal of Lower Marion Township, Montgomery County, Pennsylvania, has been appointed direct factory representative for *Elkhart Brass Manufacturing Company, Inc.*, in eastern Pennsylvania, New Jersey, Delaware, Maryland, Virginia and District of Columbia. . . . Draftette, a complete, portable drawing kit for field and office use is now marketed by *Retake, Inc.*, P. O. Box 5336, Pasadena 8, California. . . . For a free emergency first-aid calendar, write *FD Products*, 90-N1 Tracey Place, Englewood, New Jersey.

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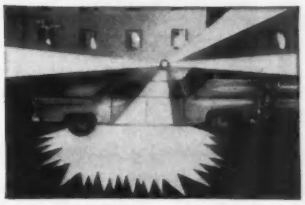

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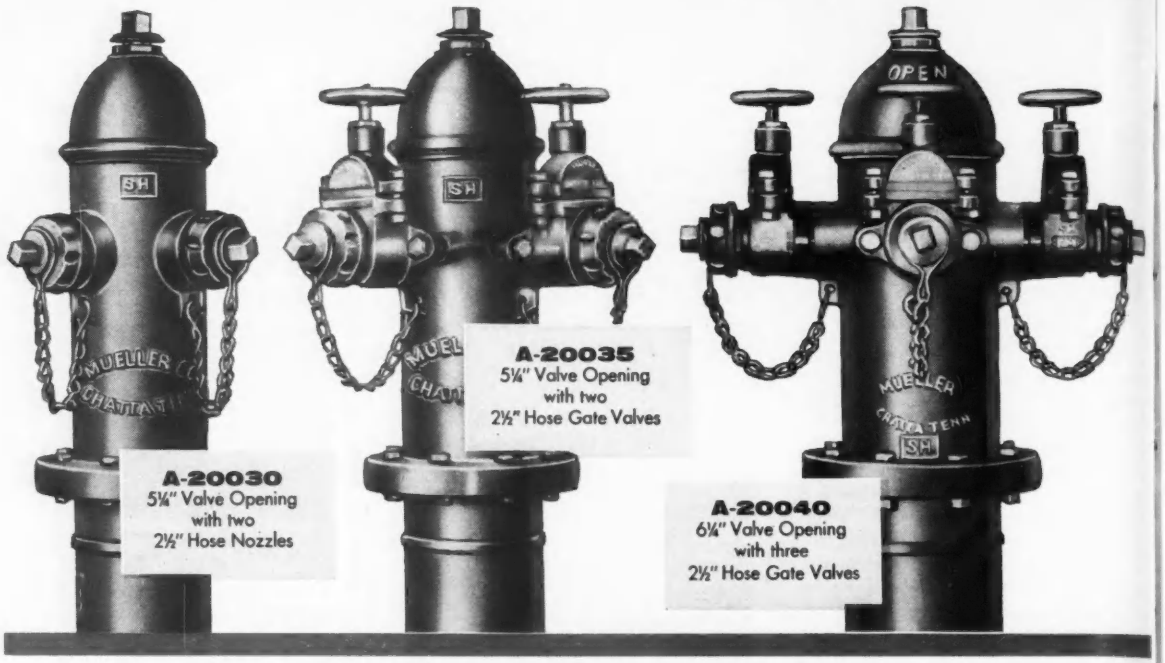

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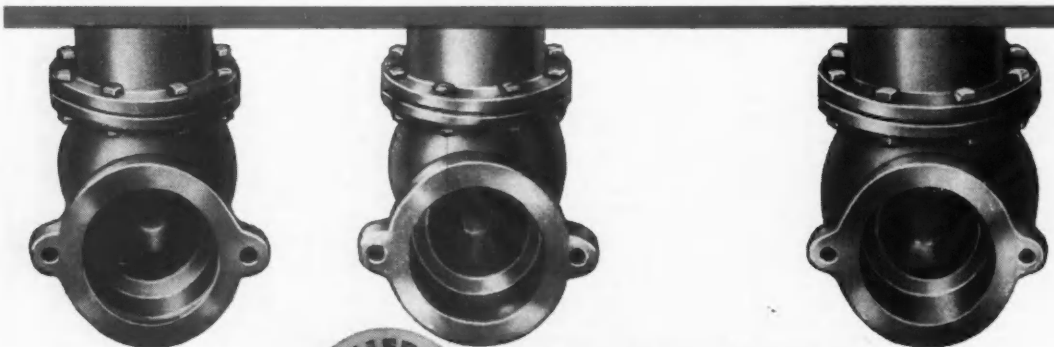

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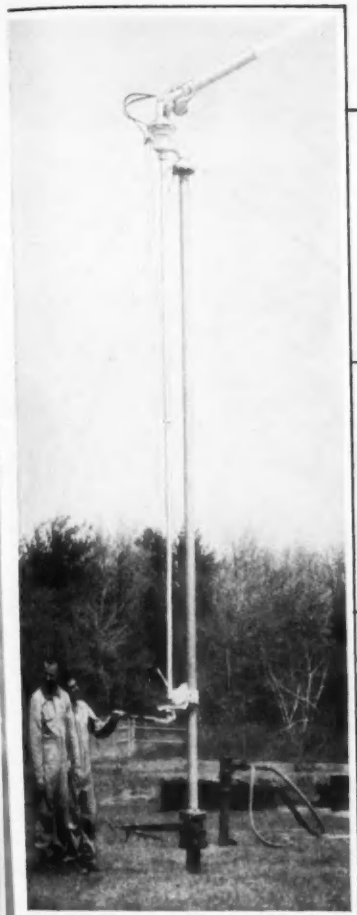

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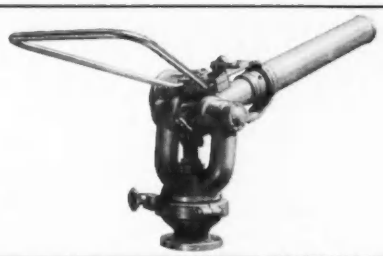

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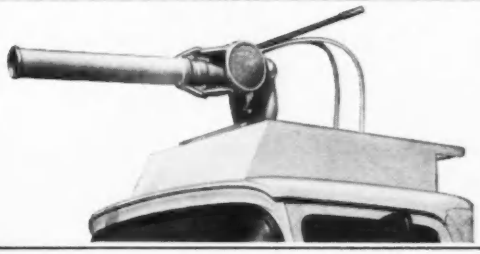

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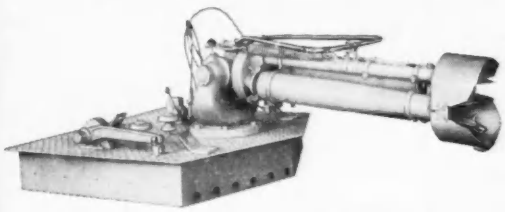

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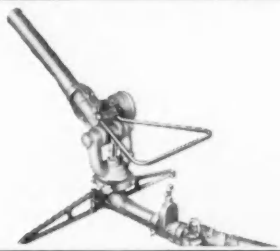

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